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CHINA'S XINJIANG UYGUR AUTONOMOUS REGION: CORNUCOPIA OR ACHILLES HEEL?

Garron Lee Elders

NAVAL POSTGRADUATE SCHOOL
Monterey, California

THESIS

CHINA'S XINJIANG UYGUR AUTONOMOUS REGION:
CORNUCOPIA OR ACHILLES HEEL?

by

Garron Lee Elders

June 1981

Thesis Advisor: C. A. Buss

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Although China's Xinjiang Uygur Autonomous Region (XUAR) is often overlooked or neglected, it is of significant importance in that the region could prove to be a major factor in the success or failure of China's current modernization effort. Containing one-sixth of China's landmass, Xinjiang is a cornucopia of vital resources such as petroleum, uranium and tungsten.

On the other hand, there are elements present which invite both domestic unrest and foreign intervention thus making Xinjiang an

achilles heel. Foremost, are the fourteen different nationalities which account for more than half of the region's population. Another troublesome element is the XUAR's geographic location which is conterminous with the Soviet Union as well as remote from Beijing.

This thesis will examine the extent of Xinjiang's assets in natural resources and, contrarily, its vulnerabilities in both geography and strategic location. The major hypothesis involved is that if the XUAR's assets can be maximized and its vulnerabilities minimized then the region will contribute greatly to China's modernization effort.

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China's Xinjiang Uygur Autonomous Region: Cornucopia or Achilles Heel?

by

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Lieutenant, United States Navy
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Submitted in partial fulfillment of the
requirements for the degree of

MASTER OF ARTS IN NATIONAL SECURITY AFFAIRS

from the

NAVAL POSTGRADUATE SCHOOL
June 1981

ABSTRACT

Although China's Xinjiang Uygur Autonomous Region (XUAR) is often overlooked or neglected, it is of significant importance in that the region could prove to be a major factor in the success or failure of China's current modernization effort. Containing one-sixth of China's landmass, Xinjiang is a cornucopia of vital resources such as petroleum, uranium and tungsten.

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I would like also to dedicate this thesis to my parents who provided me with many opportunities they themselves never had and to my wife whose patience and understanding more than withstood the tests of these past eighteen months.

I. XINJIANG AND THE FOUR MODERNIZATIONS

> I believe that if only our subjective activity matches objective natural and economic laws, will the richly endowed great northwest paint the newest and most beautiful picture in our country's four modernizations. If handled properly, the northwest can surpass the area south of the Yangtze...[1]

A. HISTORICAL PERSPECTIVE

Xinjiang Uygur Autonomous Region* or Sinkiang as it used to be called is a land of many contrasts: a linguistic melting pot for the Sino-Tibetan, Indo-European, and Altaic languages; the concourse upon which eastern and western cultures met via the ancient silk and jade caravan routes; and an interface between the Islamic and Buddhist religious worlds (see Figure 1.1). Above all else, however, it is the field in which the seeds of modern China's future will possibly be sown.

Although the current modernization effort, known as the "Four Modernizations,"** has not impacted as greatly on Xinjiang as it has on eastern China, Xinjiang will more than likely affect the future course of the four modernizations. With its wealth of resources and sparse population the region could potentially provide China with the large quantities of

---

*Hereafter referred to as Xinjiang or XUAR.

**The "Four Modernizations" is the name given to the collective modernization of agriculture, industry, science and technology, and defense.

THE PEOPLE'S REPUBLIC OF CHINA

Figure 1.1

Source: Central Intelligence Agency, China: A Statistical Compendium, ER 79-10374, p. ii.

Note: For detailed locations refer throughout to Appendices A and B (Northern and Southern Xinjiang, respectively).

surplus (and therefore exportable) resources so desperately needed to bring in foreign currency with which to pay for modern technology and equipment.

However, before the linkages between Xinjiang's resources and China's modernization can be understood, an examination of its background and the political and economic forces which are at once driving it forward and holding it in restraint must be made.

China today, has reached a major political and economic crossroad and unless Deng Xiaoping (China's behind the scenes political leader) is able to effectively carry out the four modernizations, its future as a strong international actor and nation-state will remain in question. To succeed, Deng will have to simultaneously prove himself to be a master of economic juggling and an adroit walker of the political tight-rope. If he fails at either task it will spell disaster for his entire pragmatic act.

When the "twice-purged Deng"* returned to power in July 1977, the idea of the four modernizations had been around since Zhou Enlai's speech before the Third National People's Congress in December 1964. In the prevailing pragmatic climate Zhou had called for the modernization of industry,

---

*Deng Xiaoping was purged in 1966, rehabilitated in 1973, and purged again April 1976 after the death of Zhou Enlai.

agriculture, defense, and science and technology. He also urged that trade be expanded and foreign technology be studied.

This pragmatic approach, however, never grew to fruition as China, hardly over the disastrous Great Leap Forward (GLF), became engulfed in the radical policies of the Great Proletarian Cultural Revolution (GPCR). By the time the GPCR had wound down from its most virulent phase China's economic system was in total disarray. "Responsibilities had been blurred; skilled managers and workers had been removed to unskilled posts as punishments; and the relationship between the control and local authorities was confused."[2] Both heavy and light industries which were in need of modernization in 1964 were now all the more ill-equipped to handle China's needs. The growing petroleum industry was in need of a supportive petrochemical industry and agriculture found itself wanting for requisite fertilizers. Against this background Premier Zhou Enlai, and later Vice-Premier Deng Xiaoping, renewed Zhou's four modernization program which was given formal approval at the National People's Congress in January 1975.

However, with the death of Zhou in January 1976, the undercurrent of opposition--later labelled as the "Gang of Four"*--arose to openly criticize Deng and his associates and succeeded in having him purged for the second time.

---

*Jiang Qing, Wang Hongwen, Zhang Chunqiao and Yao Wenyuan.

At that moment it appeared as though the four modernizations were doomed to a second demise at the hands of political opposition.

After Mao Zedong died in October, Hua Guofeng, Zhou's successor as premier, moved quickly to mobilize his supporters and in a lightening move arrested 30 top radical leaders including the Gang of Four who were attempting to have Jiang Qing (Mao's widow) named as Mao's successor. With the radical leaders in prison Hua who had recently thought of as a temporary compromise premier, had himself declared not only premier, but also chairman of the Central Committee of the CCP (succeeding Mao) and Chairman of the Military Commission. The stage was now set for the rehabilitation of both Deng and the four modernizations.

Within a few weeks of assuming control the new government declared its support for Zhou's four modernizations, and emphasized economic development based on a series of new principles of economic management. "In blaming China's economic ills on the Gang of Four, and calling for the elimination of their ideas, the government...managed at one and the same time to discredit a good deal of what had hitherto passed for Maoist economics..."[3]

In order to push ahead with the four modernizations, the government's first order of business was to reorganize economic management from top to bottom and to implement centralized planning control. During the previous ten years of GPCR

turmoil skilled managers and technocrats who had any associa- with the pragmatic modernization effort of the mid-1960s were fired and subjected to mass criticism. In their place were put cadre whose qualifications were based more on political allegiance than any economic or managerial skills. As well, "the political upheaval...had clearly encouraged safety-first, low-profile attitudes and an unwillingness to enforce even elementary standards of management and accounting."[4] What this meant was that Hua inherited an economic system that was totally inefficient, pervaded with cronyism, and recalcitrant towards government control.

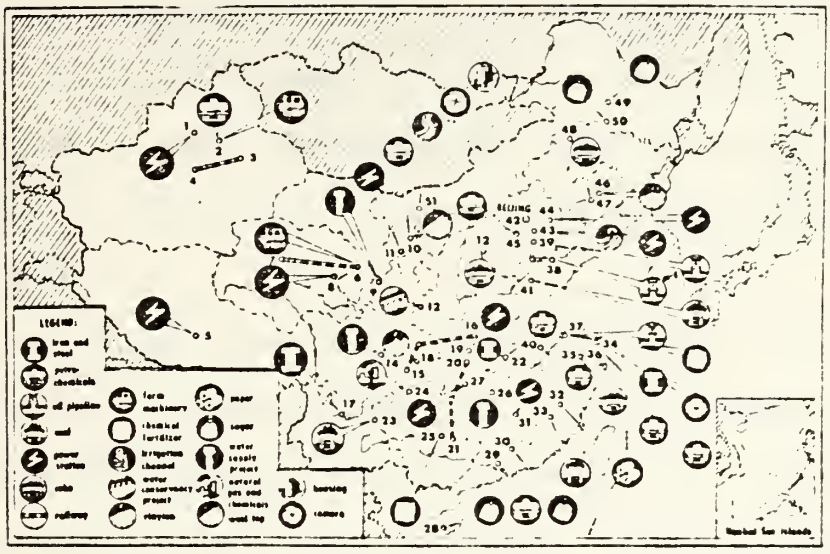
To facilitate implementation of his economic program, restore effective planning control by the center, and overcome lower level opposition, Hua launched a series of both general and sectoral conferences. In 1977 alone there were over forty major economic conferences designed to convey the administration's commitment to modernization and managerial rationality. To placate restive workers and increase productivity the government also allowed wages to rise for the first time since 1963.

Hua's overall economic policies followed those basically outlined by Zhou and Deng in 1975 with the exception that a great deal more emphasis was placed on the purchase of foreign technology and equipment. As presented at the Fifth National People's Congress in March 1978, his plan called for two-stage development: a ten-year, short-term development

plan, and a twenty-three year, long-term comprehensive plan. The short-term plan called for 400 million metric tons of grain production, a 60 million ton capacity for steel production, and an overall ten percent per year increase in industrial production by 1985.[5] The ten-year plan also called for at least 85 percent mechanization in all major processes of farm work in the communes. The ten-year plan was to be followed by a series of five-year plans to push China "into the front ranks of the world economy."[6]

With Deng working behind the scenes the resurrected four modernizations got off to a big start in 1978 with over 1,000 capital construction projects underway. As one can see from figure 1.2, these projects covered a broad spectrum of industries. Concurrently, and on an unprecedented scale, China assigned a major role to massive imports of Western equipment, complete plants and technology. In February an eight-year trade agreement was signed with Japan involving $10 billion worth of Chinese oil and coal for an equal amount of Japanese plant and equipment.[7] At midyear a trade agreement was signed with the European Community setting up a framework for expanded trade and by year end several technical cooperation agreements had been signed with foreign countries and organizations. Beijing also began to send students abroad to study science and technology and opened China up to foreign scholars, students, and tourists as well as foreign technicians and businessmen.

MAJOR CAPITAL CONSTRUCTION PROJECTS OF 1978



More than 1,000 major projects were started in 1978. A third has been completed or partially completed. The map shows a few of them.

1. Manas River Hydropower Station
2. Xinjiang Petrochemical Works
3. Turpan (Southern Xinjiang Railway)
4. Korla (Southern Xinjiang Railway)
5. Yangbajain Geothermal-Power Station
6. Xining (Qinghai-Xizang Railway)
7. Golmud (Qinghai-Xizang Railway)
8. Longyangxia Hydropower Station
9. Lanzhou water supply project
10. Wool top mill and oil refinery in Yinchuan
11. Qingtangxia water control project
12. Fengjiashan Reservoir
13. Coking plant of the Taiyuan Iron and Steel Company
14. Chengdu water supply project
15. Changqing (Xiangfan-Changqing Railway)
16. Xiangfan (Xiangfan-Changqing Railway)
17. Panzhihua Iron and Steel Company
18. Sichuan Vinylon Mill
19. Gezhouba Hydropower Station
20. Zhicheng (Zhicheng-Liuzhou Railway)
21. Liuzhou (Zhicheng-Liuzhou Railway)
22. Wuhan Iron and Steel Company's 1.7-metre rolling mill and Wuhan Petrochemical Works
23. Housuo Coal-Dressing Plant
24. Chishui Natural Gas and Chemical Plant
25. Hechi Nitrogenous Fertilizer Plant
26. Changsha water supply project
27. Fengtan Hydropower Station
28. Yanglan Sugar Refinery
29. Guangzhou Petrochemical Works
30. Wengyuan Sugar Refinery
31. Wanan Hydropower Station
32. Nanping Paper Mill
33. Yongan Coal Mine
34. Baoshan Iron and Steel Complex, Shanghai Petrochemical Complex and Shanghai Camera Factory
35. Sintering plant of the Hangzhou Iron and Steel Works
36. Zhejiang Oil Refinery
37. Qixiashan Chemical Fertilizer Plant and Luning oil pipeline, Nanjing
38. Dangying (oil pipeline)
39. Cangzhou (oil pipeline)
40. Anqing Petrochemical Works
41. Yanzhou coal base
42. Housing construction and camera factory, Beijing.
43. Beidagang Power Plant and Tianjin Petrochemical and Chemical Fibre Complex
44. Dauhe Power Plant, Tangshan
45. Renqiu Oilfield
46. Liaoyang Petrochemical and Chemical Fibre Complex
47. Coking plant of the Anshan Iron and Steel Company
48. Huolinhe Coal Mine
49. Anda Sugar Refinery
50. Zhaoyuan Sugar Refinery
51. Ancillary project of the Huanghe River irrigation area.

Figure 1.2

Source: Beijing Review, no. 12 (March 23, 1979), p. 15

During 1978 the number of Chinese delegations going abroad and foreign businessmen coming in surged as Beijing stepped up its search for industrial technology and equipment from Japan, Western Europe, and the United States. By the end of the year the PRC had been involved in negotiations for about $40 billion in complete industrial plants, modern equipment, and related technology, and had signed contracts amounting to $7 billion.[8]

Despite China's optimism and exhuberance, however, it was becoming apparent by mid-1978 that the economy was not responding as planned. Although agricultural production was up after three years of no increases, Chinese industrial production results were disappointing. As heavy industry attempted to meet goals set by the ten-year plan certain subsectors including petroleum, coal, electric power, transportation, building and a number of raw materials failed to keep pace. The result was an acute shortage of fuel, power and some key raw materials throughout industry accompanied by transportation bottlenecks, causing factory closures and underutilization of capacity.[9]

Questions were also being raised as to China's ability to pay for and absorb the projected volume of technologically sophisticated imports. As delegations returned from abroad they brought back with them an awareness of just how far advanced Western technology was and the high price that was going to have to be paid for its acquisition.

For China, this information only served to expose two major weaknesses. First, in the wake of the GPCR China's higher education system lay in shambles. Universities had been taken over by leftist forces and branded as centers of right wing decadence. With students being sent down to the countryside to gain a "real" education and professors having been harassed, the system came to a virtual standstill. "By the mid-1970s, university enrollments were [still] only about one-third of what they were a decade before, and reports from virtually all foreign visitors suggest[ed] that the campuses ...[were]...not only politically quiescent but largely devoid of intellectual life and in a state of academic semi-paralysis."[10] In essence, China was missing a whole generation of youth with higher education--the same generation that normally would have been called upon to cope with any massive influx of modern technology into Chinese society.

Secondly, and more important, was the question of how China was going to pay for "imported" modernization. In view of the Chinese aversion to incurring large foreign debts it was logical when Beijing began to push for the export of China's resources (most notably coal and petroleum) to garner foreign currency. The February 1978 trade agreement with Japan exemplified this policy. The government soon came to realize, however, that as the modernization effort gained momentum there was a corresponding increase in domestic consumption of the same resources Beijing sought to export.

China was thus caught in a "Catch 22" in which the more it modernized, the more it consumed the very resources needed to purchase the technology required for further modernization. With the existing infrastructural problems still vexing the resource industries, particularly in the energy field, it was obvious China could not sustain both increased domestic consumption and higher magnitudes of exports.

B. CURRENT POLICIES

By the end of 1978, it became apparent that China's economy was adrift in a sea of modernization: not only were the mechanics of the economy faltering, but Deng, who by now was running the show from behind the scenes, was encountering persistent opposition from leftist holdovers from the GPCR.

Consequently, at the Third Plenum which met in December, the CCP formally announced that the emphasis on political struggle of past decades had ended and that the general tasks of the party now would focus on "socialist modernization."[11] The new focus, however was not on pushing for ambitious, long-term goals but rather on remedying the conditions that constrained rapid economic development. As a result the Ten Year Plan announced earlier was scaled down and attention focused on a comparatively short transitional period (1978-1980) called the period of "Readjustment, Restructuring, and Consolidation."[12]

The aim of this readjustment period was threefold: correction of industrial imbalances, the restructuring of the country's overall economic planning, and elimination of inefficiency in the management of enterprises. In the more than two years since implementation its results have been mixed at best. As these will be discussed at length in later chapters they will not be dealt with in detail at this point. Suffice it to say, that major problems still persist today which continue to hamper economic growth. Despite gains in agriculture, China, in good years, is able to just stay ahead of local consumption. In the face of natural disasters--floods or drought--there exists no buffer of surplus and China is forced to import large quantities of grain.

In industry, as mentioned previously, there exists as a consequence of rising export demands a serious shortage of raw materials in general and energy resources in specific. Much of this is a result of inadequate transport and infrastructure systems, but it is also becoming apparent that existing sources are not inexhaustible and in the near future may be depleted if current rates of extraction are increased further.

So, in addition to having to control political opposition, rebuild China's higher education system and scientific community, Deng is faced with the possibility that major resource shortages are in the near term likely to inhibit the advance of the four modernizations. Already he has taken steps to

husband currently available resources through a substantial conservation program. Simultaneously, Beijing has stepped up its drive to seek out and develop new resource reserves. This search has led the Chinese to regions heretofore ignored or relegated to future development.

C. THE XINJIANG CONNECTION

One such region that has received widespread attention is the northwest, or more specifically the Xinjiang Uygur Autononomous Region. Containing over one-sixth of China's total landmass, Xinjiang is rich in a variety of resources including petroleum, coal, hydroelectric sources, uranium, tungsten, iron and numerous other precious and non-precious, ferrous and non-ferrous metals. As well, with large-scale land reclamation projects the region has slowly become abundant in agricultural products such as cotton, food grains, melons; and livestock including sheep, cattle and horses.

At present, it can also be said in the same breath that far more remains unknown than is currently known about the total extent of the area's resources. Over the years two factors have contributed to this lack of knowledge. First, the Chinese have, until recently, found resources in sufficient quantity in the east to satisfy their industrial needs. And secondly, Xinjiang's remoteness and China's poor transportation network have precluded any major exploitation of the region's resources from being seriously considered.

In the future, before any major exploitation effort is undertaken, Beijing will additionally have to contend with regional elements that, in themselves, could invite both domestic unrest and foreign interference thereby having an undesirable effect on the four modernizations. Foremost are the region's fourteen different nationalities which account for more than half of its population. Fiercely independent, many of these minorities are Islamic in religion and, after years of prejudicial treatment by the Han,* are anti-Han in sentiment. Another troublesome element is Xinjiang's geographic location which is conterminous with the Soviet Union as well as remote from Beijing. Combined with the Soviet's historical involvement in the region these factors have made Xinjiang extremely vulnerable and have caused it to be referred to as China's "achilles heel."

In summary, China is going to be confronted in the immediate future with some major decisions that will possibly necessitate a shift in strategic interests and policies. If Beijing turns to Xinjiang to alleviate China's pressing resource shortages, as is the author's belief, it will involve not only a change in the direction of capital investment flow, but as well, a rethinking of China's defense posture. Additionally, due consideration will have to be given to Beijing's

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*Ethnic Chinese who make up the majority of China Proper's population.

minority policies which in the past have tended to arouse hostility rather than induce cooperation.

II. A LAND UNTO ITS OWN

A. GEOGRAPHY

REGIONAL GEOGRAPHICAL FEATURES

Figure 2.1

Source: W.A.D. Jackson, The Russo-Chinese Borderlands (Princeton, N.J.: Van Nostrand Co., 1968), p. 78ff.

From its terrain to its people, Xinjiang, the westernmost and largest province in China, is a land of variety and contrasts. Containing more than 650,000 square miles or one sixth of China's landmass, Xinjiang is composed of two large basin areas: The Junggar (Dzungarian) and the Tarim which are each enclosed by imposing mountain ranges (see Figure 2.1). Elevations run from over 25,000 feet in the Kunlun Range to

505 feet below sea level in the Turpan (Turfan) Depression.[13] In these extremes of altitude are found year-round snow in the higher, and deserts of almost zero precipitation at the lower. Temperatures, too, are highly variant with the Tarim Basin recording an average high in summer of 115°F and a low in winter of -20°F. Completing Xinjiang's variegation is the fact that it is populated by many different and distinct ethnic groups.

As mentioned above, Xinjiang is composed of two large basin areas. The southern or Tarim Basin is bound by the Kunlun mountains to the south, the Karakorums and Pamirs to the east and Tian Shan (Heavenly Mountains) to its north. From these imposing mountains flow innumerable streams which are fed continuously by way of snow melts in the higher elevations. These headwaters, in turn, feed into the Tarim River which flows along the eastern and northern boundaries of the basin. After traversing the perimeter regions for over 1,000 miles the Tarim River empties into the salt marshes of the Lop Nur (Lop Nor) in the western region of the Taklimakan Desert.

To the north of the Tarim is the Junggar Basin which is encircled by the Tian Shan Mountains to its south, the Alataw and Tarbagatay ranges to the west, and the Altay mountains to the north. As with the Tarim, these rugged mountain ranges provide natural protective barriers. The Junggar, however, has several easily accessible passes to the west

through breaks between the western mountain ranges. Narrow in breadth they have, none-the-less, provided for population movements from Turkistan into China and vice versa. Again, as with the Tarim, the Junggar has an inhospitable desert at its core.

B. THE PEOPLE

In both basins snow/ice melt water distribution and elevation have determined Xinjiang's demography. Owen Latimore, in an interesting observation, attributes the scattered and isolated ethnic societies in Xinjiang to "oases geography."[14] He contends that where oases have existed around the perimeters of the central deserts, conditions were present for stationary cultures to evolve which, in turn, developed regular agriculture and domesticated animals such as sheep and donkeys. Because of the distances between oases and the difficult terrain which intervenes, interaction between cultures was sporadic at best. Only trade caravans traversing the silk routes provided occasional communications between these isolated settlements.

In the higher elevations on the well-watered plateau grasslands the environment was more conducive to the evolution of nomadic pastorial people.[15] Although the grasslands (steppes) was not sufficient to support permanent settlements, it did provide ideal conditions for cultures such as the Kazakhs to thrive by grazing sheep and goats. By staying in

the higher elevations in summer and moving to lower elevations in the winter, the Kazakhs have remained mobile and aloof from the established oasis cultures.

Over the centuries, and until recently, the only common bond between these cultures has been Islam which appeared in Xinjiang in the eighth century A.D. For the most part, however, they have remained a fiercely independent and proud people who have rebelled against outside rule and Han rule in particular. In addition, these groups have had little respect for geopolitical boundaries imposed by Russia or China and have in the past migrated back and forth depending on the season or political climate in either country.

In total, there are over ten different nationalities in Xinjiang. The Chinese officially recognize the Uygur, Kazakh, Khalkhas, Mongolian, Xibe, Tajik, Uzbek, Tartar, Hui, Kirgiz, and a small group of White Russians.[16] While many are indigenous, some are either refugees from Soviet Turkistan or nomadic herdsmen caught on one side of the controlled Sino-Soviet border and unable to return.

C. RESOURCES

Overall, Xinjiang is rich in its variety of natural resources, but the total extent of these resources remains far from known. Systematic surveying by geologists and mineralogists in Xinjiang is a fairly recent phenomenon which has to date been carried out only on a small scale.

The most notable of Xinjiang's resources are petroleum and coal, both of which are found in extensive quantity in and around the major basin areas of the Junggar and Tarim. Because these resources are discussed at great length in section IV, only notice of their abundance will be made at this point.

Other natural resources including water, timber, fur bearing animals, and minerals are found in the Tianshan and other surrounding mountains. Iron which is found in notable quantity in Xinjiang is mined in the vicinity of Urumqi at several small mines. Recently it was reported that one large and six medium iron deposits were discovered in the Gobi Desert in eastern Xinjiang. Total recoverable iron at these mines is estimated to be 250 million tons.[17]

Tungsten and molybdenum are found near Qinghe, Fuyun, and Wenchuan. Chromium deposits exceeding 1 million tons have been found in the Zhayier Mountains in the northwest part of the Junggar Basin.[18] Copper deposits are worked in the Baicheng-Kuche area, while lead, zinc and silver are mined west of Kaxgar at Wuqia and east of Yining at Nilike. Placer and lode deposits of gold exist in the Altai district and in the Kunlun Mountains.[19]

Additionally, Xinjiang has substantial deposits of radioactive elements in both the southern and northern mountains and in the western portion of the Tianshan. According to K. P. Wang, Czech scientists reported that the Chinese

started to use lithium-7, which was easily procurable in Xinjiang, to produce a thermonuclear fuel for the detonation of atomic bombs.[20]

A final mineral worth mentioning is sodium chloride or salt. Xinjiang produces over 450,000 tons of salt annually from its more than 120 salt lakes. Of this 400,000 tons is exported to other regions. In one location near Akqi there is a salt dome that covers more than 16 square kilometers and is 1,000 meters thick.[21] In addition to sodium chloride the region is a major producer of sodium sulfate which is used in the manufacture of medicines, dyes and glass. From Xinjiang, it is exported not only to other regions in China, but to Southeast Asia as well.

D. AGRICULTURE

Xinjiang's agriculture exists basically along fertile belts that skirt the two major basin areas (see Figure 2.2). In these belts Xinjiang receives the majority of its rainfall and the temperatures are more mild. Between 15 and 20 percent of Xinjiang's total area, or about 760 million mou*, is suitable for animal husbandry, either on a seasonal or year-round basis. Two-thirds of the total pasturage is located along the fringes of the Junggar Basin, primarily in the Yili, Tacheng, and Altai districts. There, nearly 40 percent of the

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*A mou equals .067 hectares or .1647 acres.

AGRICULTURAL AREAS IN XINJIANG

Figure 2.2

Source: Donald H. McMillen, Chinese Communist Power and Policy in Xinjiang, 1949-1977 (Boulder, Colorado: Westview Press, 1979) p. 6.

population is engaged in animal husbandry. About 10 percent of the region's total population has traditionally been pastoralists, being predominantly Kazakhs and Mongols in the north and Kirgiz and Tajiks in the western regions of the Tarim Basin.[22] Livestock raised in Xinjiang includes horses, camels, sheep, goats, pigs and cattle. In 1978-79 China, confident of Xinjiang's livestock potential, began a pilot project of exporting the region's beef to Hong Kong which was well-received.[23]

Prior to 1949, oasis agriculture in southern Xinjiang accounted for most of the regions cultivated land and occupied almost half of the population. Since that time, and with the guidance of the Production Construction Corps, Xinjiang's cultivated land has been greatly expanded through major irrigation and land reclamation projects. In 1949, the region's total cultivated land area was estimated at 16.7 million mou. Today, there are over 17 million mou under cultivation in southern Xinjiang alone.[24]

In this region are grown oil bearing crops such as rapeseed, linseed, sunflowers, sesame, peanuts, soyabean, walnuts and almonds. Cotton, another industrial crop, is grown extensively in the Turpan Basin and is of the long-fiber variety. In 1980, the Tarim and Turpan areas produced over 15,000 tons of cotton.[25] Agricultural foodstuffs include world-famous Hami melons and Turpan grapes, as well as apples, dates, wheat, rice and sugar beets. In 1980, it was reported that reclamation areas harvested 200,000 tons of grain, and 350,000 mou of sugar beets were sown.[26]

As agriculture becomes more mechanized, specialized, and receives the benefits of modern technology, Xinjiang's production capabilities should increase dramatically. The region's peripheral geography is in some ways extremely similar to that of the San Joaquin and Imperial valleys in California. Many of the same soil conditions (fertile, but subject to leaching), and irrigation problems are present in

Xinjiang as they are in these valleys. Accordingly, Xinjiang could potentially become a major food supplier for the rest of China or at least a buffer against crop failures in the east.

III. HAN POLICIES AND SOVIET INFLUENCE

A. 1912-1949: WARLORDS AND SOVIETS

Formally organized as a province in 1884, Xinjiang, with its diverse nationalities has proven to be an unruly stepchild. Prior to the entrance of the People's Liberation Army (PLA) in 1949 the area had been as wild and wooly as the American West in the 1860's. Far removed from the central government in eastern China, Xinjiang had been for decades the scene of political intrigues and internecine quarreling between Han intendants and the non-Han, and amongst the different minorities themselves. Extremist warlordism had moved Xinjiang to not only flirt openly with the Soviet Union, but to declare its independence as the "Eastern Turkistan Republic."

Effective rule over the area by the Chinese had encountered several obstacles--not the least of which was the fact that Han Chinese accounted for only six percent of the population. The largest group, the Uygur, made up the majority. A Turkic-speaking people the Uygur were concentrated in the Tarim Basin where they pursued a settled oasis life of farming. The next largest ethnic group, the Kazakhs, accounted for ten percent of the area's population. These nomadic herdsmen frequented the Junggar steppes and were known for their horsemanship and fighting abilities. After

the Han which ranked third were the Khalkhas, Uzbeks, etc., each forming small but identifiable cultures scattered throughout the area.

Although each of these peoples exhibited their own ethos, most had at least two things in common: Islam and a fierce sense of independence. Under Chinese rule these two elements combined to produce a vitriolic anti-Han sentiment which, over the years, had manifested itself in several violent Moslem revolts which the Russians had been quick to exploit. Fortunately for the Chinese, animosity and distrust between ethnic groups prevented these rebellions from sustaining the unanimity required for success. As well, Russian encouragement proved limited to the extent that their own fear of rebellion spilling into their Central Asian domain prevailed.

Another significant obstacle to effective Chinese rule proved to be geography. Because of the expansive landmass which separated eastern China from Xinjiang, military support for Han rulers in times of crises proved uncertain at best. The journey from Lanzhou westward was an arduous one with stretches of road passing through hundreds of miles of Gobi desert. If the elements didn't bring a military mission to its demise, there was always the possibility of an ambush by marauding bands of Islamic converts (Tungans) in the Gansu region.

With it being weeks or even months before military support could be counted on from the central government, warlords

often looked across the border to Russia for protection against indigenous rebels. Being old hands at opportunism in China, the Russians were more than willing to supply weapons and troops in exchange for favorable trade concessions and missions. Obviously, to maintain power and his life a warlord had to be cunning, ruthless, suspicious of political pretenders, and, above all, attuned to the shifting tides of power between Russia and China. Between the fall of the Manchu Dynasty in 1911 and the communist takeover in 1949, Xinjiang was ruled by a succession of such Han warlords.

The first, Yang Zeng (Yang Tseng), ruled with an iron hand from 1912 until his assassination in 1928. During his rule Yang maintained an independent, but friendly posture towards Russia. With eastern China split between the forces of Zhang Zuolin (Chang Tso-Lin) and Sun Yat-sen's Nationalists, central government control proved ineffectual which prompted Yang to conclude on his own several economic agreements with the Soviet Union. Soviet consulates were established in Urumqi, Gulja, Qoqek, Altay, and Kaxgar. In return, Yang appointed consular officials in Semipalatinsk, Tashkent, Alma Ata, Zaisan, and Andijan.[27] Through these agreements and exchanges the Soviets enjoyed extensive economic privileges and were able to extend their influence over one-sixth of China.

Domestically, Yang repeatedly suppressed incipient intrigue and revolt through a combination of bribery, force,

and nepotism. On July 7, 1928, Yang's seventeen year tenure came to an abrupt end when his own commissioner of foreign affairs succeeded in having him assassinated at a dinner party.

Jin Shuren (Chin Shu-jen), head of the Political Department, ascended to the governorship and was able to maintain control through continued acts of repression and violence until 1933. In 1931 resentment against his rule broke into open revolt. Killings by marauding rebels and reprisal strikes by Jin's forces spread throughout Xinjiang. Whole towns were leveled and crops destroyed as both sides pursued a scorched earth policy. The following year Ma Zhongying (Chung-ying), a notorious Tungan military commander from Gansu (Kansu), was recruited by the rebels. By 1933, forces under his command had plundered the countryside and were threatening Urumqi. In April of that year local forces killed Jin's younger brother in their attempt to oust the corrupt governor. Unable to cope with the unrest Jin fled to the Soviet Union and later returned to Nanjing (Nanking) where Chiang Kaishek jailed him on charges of concluding unauthorized trade agreements with the Soviets.[28]

It was at this time that Xinjiang's most celebrated warlord came to power. A military commander educated by the Japanese War College in Tokyo, Sheng Shicai (Sheng Shih-t'sai) was to prove himself adept at balancing political balls, both foreign and domestic alike. Like his predecessor he

was cunning, ruthless and suspicious. However, with the deeper involvement of the Japanese in China and the onset of World War II, Sheng's balancing act became more complex in its dimensions. No longer was it Soviet support counteracting rebel forces and Kuomintang interests, for now Japan's designs on northwestern China had to be considered.

Sheng's first task was to quell the revolt which had disposed of Jin Shuren. As with his precursor he turned to the Soviets for assistance. In January 1934, Soviet troops and aircraft joined Sheng's forces to crush Ma Zhongying's seige of Urumqi and drive him southward. In a move which reflected Moscow's Machiavellian diplomacy Ma was given refuge in the Soviet Union--perhaps for use at a later date should Stalin perceive the need. Ma's brother-in-law, Ma Hushan, then took over command of Xinjiang's rebel forces.

In May of 1935, Soviet involvement became more entrenched when Sheng signed a five-year loan agreement for five million gold ruples in economic and military aid.[29] This, of course, was done without Chiang Kaishek's approval. With Xinjiang's economy becoming more dependent upon the Soviet Union, Sheng began to be more openly pro-Soviet and anti-imperialist. This, in part, was to counteract KMT influence and thwart suspected designs on Xinjiang.

Moscow's hold on the province tightened again when Sheng called for renewed military assistance in May of 1937 to suppress yet another revolt in southern Xinjiang led by Ma

Hushan. Under the superior firepower of Soviet tanks and aircraft, and with internal dissention amongst its own ranks, Ma's forces were defeated in 1938. This time the Russian troops did not withdraw. They, instead, set up a permanent camp in Hami and were renamed as the "Red Army Eighth Regiment."[30]

This trend of Soviet involvement increased as WW II allied China and the Soviet Union against Japan. Xinjiang became a pipeline for Russian war material flowing into China, and in 1940 an aircraft assembly plant was set up by the Soviets in Urumqi. In 1940, a "Tin Mines" agreement was signed giving the USSR fifty year mining rights in Xinjiang. As the result of other verbal agreements with Sheng, Russia began to exploit the province's mineral wealth including both tungsten and oil.[31] As the Russians kept geological survey results and mining records to themselves, China received little compensation.

1941 proved to be the high point in Xinjiang-Soviet relations. However, it was also the year in which two events took place causing Sheng to question his reliance on the Soviets. First, on April 13, Russia and Japan signed a non-aggression pact which placed China, and Xinjiang in particular, in an ominous situation so far as Soviet support was concerned. Secondly, German forces crossed into Russia on June 22, which sent the Soviet forces reeling. Not only Soviet support, but Soviet survival was now in question.

By early 1942 Sheng's mind was made up. The Russians were losing to the Germans and Chiang Kaishek was being supported by the Americans who seemed to be winning. With the permutability of a chameleon, Sheng began an anti-communist and anti-Soviet purge of Xinjiang. Hundreds of Soviet personnel and Chinese Communist Party cadres were jailed and held for over a year without trial. In 1943 many, including Mao Zedong's brother, Mao Zemin, were executed after "conspiracy confessions" were obtained. Negotiations were commenced for the cessation of Soviet mineral exploration and for the return to Chinese control of joint companies. Although these negotiations would drag on for years, they none-the-less, marked the beginning of the end for expansive Soviet involvement in Xinjiang.

Simultaneously, Sheng opened communications with Chiang Kaishek and expressed his desire to return to the fold and work amicably with the Kuomintang. Madame Chiang responded with a personal letter from the Generalisimo forgiving Sheng of all past misdeeds and, as well, assuming responsibility for their consequences.[32]

What Sheng failed to foresee was that in turning against the Soviets he had effectively cut himself off from the only reliable military assistance capable of controlling local rebellion. As Sheng only controlled the urban areas perhaps he had lost sight of the festering unrest which predominated in the rural areas. As suspicious and paranoid as Sheng was,

this does not seem to be a plausible response. Whatever the answer, Sheng's inability to control renewed rebellion was to contribute in no small way to his downfall.

In the spring of 1943, Usman Bator, an Altay Kazakh with a reputation as a savage fighter, rose to carry the anti-Han banner. Establishing contact with the Mongolian People's Republic (MPR) he began to receive both arms and encouragement in his struggle against Sheng. By June much of northern Xinjiang was again in open rebellion. Sheng responded by ordering a massive resettlement project designed to relocate dissident Kazakhs from their homelands to southern Xinjiang. Many of the angered Kazakhs chose to escape into the MPR rather than to be moved south. The only thing accomplished by Sheng's maneuvers was to add fuel to an already volatile situation. In March 1944, the rebellion had spread throughout Xinjiang and Usman's forces were inflicting heavy losses on Sheng's troops. The situation was out of control.

By October Chiang decided that he had gained enough power over Sheng and had tired of his inability to cope with Moslem rebellion. That same month he appointed Sheng to the Ministry of Forestry and Agriculture, and replaced him with Wu Zhongxin (Chung-hsin).

The replacement of Sheng may have allayed Chiang's fears of allegiance in Urumqi, but it did nothing to avert further rebellion. In November Gulja (Kuldja) came under seige by Turki forces led by Uygur Akhmedjan Kasimov. On January 31,

1945, Gulja fell to the rebels and the establishment of an "Eastern Turkistan Republic" headed by Uzbek Khan Ture was proclaimed.[33] At the same time, Usman and other rebel forces from the regions of Yili, Tarbagatay and Altay were gaining control of northwestern Xinjiang. By July they had occupied Qoqek (Tacheng) and were threatening Urumqi itself. Wu had lost command over Xinjiang with the exception of his enclave at Urumqi and even that was in doubt. Later that summer White Russians took up arms and joined in the revolt--Chinese rule was hanging by a tenuous thread.

In September, Chongqing (Chungking) dispatched General Zhang Zhizhong (Chang Chih-chung) from the KMT's northwest headquarters at Lanzhou (Lanchow) to Urumqi. With Soviet officials mediating Chang entered into negotiations with Akhmedjan Kasimov. The result was the agreement on "eleven points" which guaranteed considerable cultural independence and a share in provincial government to the minorities.[34] In addition, Chang replaced Wu as provincial chairman and de facto autonomy was granted to the districts of Yili, Altay and Qoqek. Two vice chairmen, Burhan Shahidi, a Tartar, and Masud Sabri, a wealthy Uygur, were appointed to assist in running the government. As Masud Sabri was a member of the KMT Central Executive Committee, Chongqing had actually consolidated control in its move to apportion more authority to minorities.[35]

In May of 1947, Masud succeeded General Chang as provincial chairman and commenced to organize a new government. In doing so he completely disregarded earlier accords on minority representation and minority affairs in general. Outraged, the Yili group left Urumqi and renewed hostilities. Zhang Zhizhong, who had remained behind to help with the transfer of government, tried to intercede, but to no avail. It was obvious that Moslem mistrust of the government at Urumqi had hardened.

With the Kuomintang government collapsing in the east, Burhan Shahidi succeeded Masud as provincial chairman on December 31, 1948. By July of the following year, Chiang's forces were being routed and Peng Dehuai's (P'eng Teh-huai) Red Army stood ready to enter the province.

In order to have a voice in the new communist government several top rebel leaders left Yili for Beijing to participate in the government organizational proceedings. Mysteriously, the whole entourage was killed in a plane crash on August 27. With the ranks of the Turki nationalism leadership decimated, Seypidin (Saifudin) Azizov (later known as the "survivalist") assumed the role of spokesman for the rebel cause. In this capacity he attended the Chinese People's Political Consultative Conference as a representative of the Yili people. However, once in Beijing, Seypidin spoke as a Han Chinese when he presented the Yili revolt in an anti-feudal communistic light, and not as a nationalistic Turki

movement to achieve independence of Chinese rule.[36] Much to the rebels dismay, Xinjiang had produced yet another chameleon.

In October, the People's Republic of China was formally inagurated and the People's Liberation Army (PLA) moved into Xinjiang. A new political administration at Urumqi was installed with Burhan and Seypidin as chairman and vice chairman respectively. In turn, Peng Dehhui and Zhang Zhizhong were put in command of the Urumqi headquarters of the Xinjiang military establishment. Shortly thereafter, Usman Bator, who had continued to wage a private war against the Chinese was captured and executed. With its leaders either communist or dead, and a renewed friendship in the wind between the PRC and the Soviet Union, the Yili revolt was finished. Abruptly, an era had passed and a new one begun, but the hatred and mistrust would be slow in dying.

B. 1949-1955: INITIAL COMMUNIST POLICIES

When Mao Zedong proclaimed the establishment of the People's Republic of China on October 1, 1949, he was accutely aware of the massive rebuilding which lay ahead. Wasting no time he immediately set about to politically unify China and rebuild its war torn economy.

In Xinjiang bitter anti-Han sentiment remained strong and justifiably so. Mao realized that rebelling minorities would contribute little to a socialist society and would be counter-productive to any economic rehabilitation. He also

MINORITY PEOPLE WELCOMING THE RED ARMY

Source: China's Minority Nationalities (San Francisco, California: Red Sun Publishers, 1977), p. 12.

knew that past repression and forced policies had met with disaster. Unity and equality under the socialist banner would have to be paramount if Xinjiang were to become an integral part of the "new" China. With this in mind Mao approached the province aggressively, but solicitously.

Mao's first step was to legitimize the various ethnic groups as part of China's "big fraternal and cooperative family composed of all its nationalities." This was

accomplished through the central governments "Common Programme" which was promulgated in 1949 as a basic set of fundamental laws for the People's Republic. Article 9 of this document stated, "All nationalities in the People's Republic of China shall have equal rights and duties." Article 51 of the same document went a step further with the promise of regional autonomy and local autonomous organizations for those areas in which minorities are concentrated. It also gave them the right to join the PLA and organize their own security forces. And lastly, it gave minorities the freedom to "develop their dialects and languages, to preserve their traditions, customs, and religious beliefs."[37]

Immediately after liberation an intense propaganda campaign was launched to educate the minorities as to their rights as equal members in the People's Republic. PLA cadres were sent en masse to the countryside to inform the various nationalities of the advantages of a socialist society and, in turn, educate themselves as the peculiarities and needs of the minorities. Theatrical groups staged shows which demonstrated how the government of the People's Republic would replace discriminatory policies of former Chinese regimes with those of fraternal respect and mutual help. As well, PLA soldiers distributed tools and food supplies to the herders and army medical teams provided them with free treatment.[38]

Mao Zedong's second step, to rebuild the economy, was set in motion when Peng Dehuai flew into Xinjiang in December 1949, to reorganize local military forces there. The former rebel forces in the Yili region numbering 30,000 men were regrouped as the Fifth Army while the surrendered Nationalist troops were regrouped as the Ninth Army. In the spring of 1950, these forces and local PLA forces were reorganized and "ordered to be concentrated in the steppes along the Jungar and Tarim Basins to build irrigation works, reclaim barren lands and to develop agriculture, animal husbandry and subsidiary agriculture production."[39]

In August, 1954, the Chinese proceeded to regroup these construction units, which were then engaged in "military labor," into the "Production Construction Corps" (PCC) of Xinjiang Military Region. This corps was to become a "comprehensive production unit with workers, peasants, soldiers, students, traders, foresters, shepherds, and fishermen all participating under the direction of Xinjiang Military Region while still maintaining the organizational form of division, regiment, battalion, company, and platoon."[40] At this time the organization had grown to over 200,000 men and had been divided according to tasks into "Agricultural Construction Divisions" and "Engineer Construction Divisions." The former engaged in opening up barren lands, plowing and planting in various reclamation districts and the latter in basic construction work in communications, irrigation, and mining.

In order to coordinate China's economic rebuilding and the party line, Mao set up new and expanded existing administrative agencies. The party organization most closely concerned with minorities work was the United Front Work Department (UFWD) of the Party Central Committee. Originally set up in Yenan in 1944, the UFWD was responsible for shaping the broad outlines of policy in minority areas in accordance with the party line. General guidelines from the UFWD were sent to the Nationalities Affairs Commission (NAC) which was, in turn, charged with implementing them. Although subordinate to the UFWD, the NAC, which met daily and functioned as a regular ministry, wielded considerable power.[41] Organizationally, the NAC was composed of a general office and several departments, each dealing with the minorities of a single large geographical area.

In 1952 several regulations were passed by the Government Administration Council (GAC) which further delineated minority rights and duties. Included in these regulations was the right of minorities to freedom of thought, speech, publication, assembly and change of domicile. Another regulation called for the implementation of regional autonomy for nationalities.[42] In 1953 an electoral law was promulgated stating that universal suffrage applied to all nationalities. It also set the number of deputies to be elected by minorities to the All-China People's Congress at 150.

When the Constitution of 1954 (the PRC's first) was adopted on September 20, it specifically addressed self-government of national autonomous areas and granted minorities the right to administer their own local finances. These areas were also permitted to employ spoken and written languages commonly used in the locality in conducting government business. Unlike its Soviet counterpart, the PRC's constitution did not grant autonomous areas the right to secede.[43]

On October 1, 1955 with much party pomp and ceremony, Xinjiang became Xinjiang Uygur Autonomous Region thus exercising its constitutional right. Despite a great deal of publicity, its impact on minority life has been debated. In his monograph, The Ili Kazakh Autonomous Chou, George Moseley contends that the establishment of autonomy was of no political significance for the Kazakhs.

> It merely defined an administrative area; this might just as well have been accomplished by a decree of the central government had it not been necessary to satisfy an ideological requirement. The representatives of Kazakhs who served at various levels in the administration did not represent the interests of their constituents; rather they implemented directions from above. Their success depended on how enthusiastically they could advance the interests of their state regardless of local sentiment.[44]

Although autonomy may have been more of a legal document than a reality, it did represent, in no small way, the communists' sincerity at reversing past repression and racial prejudice. It was also demonstrative of their determination to fully incorporate Xinjiang into China's economic and

political sphere. For many of the province's minorities communist rule brought a welcomed respite from the constant bloodshed and warfare of the previous decades. It may not have brought the independence sought by Moslem groups, but it did bring improved living standards through greater productivity and economic planning.

Since Beijing did not initially force collectivization in minority areas, there was minimal conflict and disruption of life styles. The "lower cooperatives" which were introduced corresponded in size to the extended family of most minorities so their introduction to the area did not cause the problems encountered when the larger communes were established during the Great Leap Forward.

Overall, communist rule in the early 1950's was both benevolent and beneficial. Ignorance of minority customs and religious rites posed occasional problems for Han cadre, but compared to past prejudice it was minor in scope. Unfortunately, the prejudice which was not in the open, lay just below the surface awaiting the slightest provocation. During the Great Leap Forward and the Cultural Revolution the provocation was present and rebellion flared into the open once again.

C. 1956-1976: MASS MOVEMENTS AND RADICAL SHIFTS IN POLICY

By the mid-1950s the moderate political winds from the east began to shift toward a more radical direction that

would soon engulf China, including Xinjiang in two major upheavals -- the Great Leap Forward (GLF) and the Great Proletarian Cultural Revolution (GPCR). The minorities honeymoon with their communist keepers was rapidly coming to a close. Beijing had decided that the march towards socialism was moving too slow and that the time had come to surge ahead -- minority peculiarities notwithstanding.

In a not so subtle manner the Chinese Communist Party (CCP) began to introduce cultural policies which were aimed at changing local customs and breaking the grip of Islam. In August 1956, on the advice of the Soviets, the Party adopted a modified Cyrillic alphabet as the written script for Uygurs, Kazakhs, and Kirgiz. It was hoped that this reform would allow minorities to learn modern science, eliminate illiteracy and cultural barriers; and more importantly, erode the old Muslim religious teachings.[45]

Concurrently, the Party stepped up its collectivization efforts amongst regional pastoral minorities and instituted more radical policies. For the Kazakhs and Kirgiz who were used to seasonal migration with their herds, these policies were most repugnant. Opposition to Han authority and policies which lay close to the surface broke out in September with riots occurring in Hotan (Hetian) and Muyo (Muyu).[46]

In the following year, during the Hundred Flowers campaign which called for criticism against the party and government, minority leaders came forward to complain bitterly about Han policies.

> The outpouring of grievances from all quarters proved shocking to the party, but nowhere more so than from the minorities' areas. People complained that the so-called privileges they had received were as useful to them as "ears on a basket," and that they had received "many rights in theory, few in practice." Minorities' cadres were criticized as lap dogs of the Han and traitors to their own people. Suggested solutions ranged from pleas to give minorities more power within the existing system to outright demands for secession. A few angry voices even demanded that all Han Chinese leave their areas immediately.[47]

As quickly as the campaign had started it came to a halt in June with the launching of a massive rectification campaign that was designed to purge the party of "rightest" elements that had come forth in the previous two months to attack the socialist system. The slogan "let a hundred flowers bloom" remained official policy, but the policy was no longer to cultivate new flowers, but to root out "poisonous weeds." Although minorities in general were spared in this turn about in policy, many of the minority elites who had served as government officials became main targets of the rectification campaign. Singled out as "nationality chauvinists," many minority intellectuals were sent for rehabilitation through reeducation reform or party labor, depending on their age and health.[48] Additionally, Xinjiang Islamic Association members were sighted for placing religious interests above those of the state.

At this time subtle hints of more drastic policies which were to arrive with the Great Leap Forward began to appear. Toleration and respect for minority customs and habits and

the special customs and peculiarities of Xinjiang began to be criticized as anti-socialist and a roadblock to exploitation of the region's full production capabilities. A call from the more radical Party members began to be heard for the rapid assimilation ("fusion") of the non-Han peoples and their culture with the Han people of China. Their views on minorities policy were part of a growing dissatisfaction among certain members of the Chinese decision-making elite with the progress of reforms in general and that the adopted Soviet model was not working.

When this dissatisfaction culminated in the launching of the Great Leap Forward in February 1958, it affected minorities' areas in many of the same ways as it did the rest of China, including the establishment of communes, huge dining halls, virtually compulsory day care for children, and backyard furnaces. It also had effects in some ways which were unique to minorities.[49] Toleration of customs and culture which had been viewed disapprovingly was not outright prohibited. By August, Beijing had declared "war" against all backward customs which stood in the way of progress and were a hindrance to production. Also announced were new drafts for the reform of Uygur, Kazakh, Mongol, Xibo and Kirgiz script based on the Latin alphabet which was basically an extension of language reform instituted in 1956.

As intolerable as those GLF policies were they paled in the face of the communization effort that was launched by a

directive of the CCP National Congress and transmitted to the XUAR via the CCP Xinjiang Committee in June 1958. Affecting the nomadic herdsmen the greatest, the commune structure made no allowances for either the migrant customs of the herdsmen nor their cultural family structure. In the words of George Mosely:

> [Communization] ... implied ... the dissolution of the traditional Kazakh social structure and the reorientation of the individual Kazakh toward the state. Not only the uru [clan], but the extended-family units (aul) which constituted it, were to be tossed on history's rubbish heap and the individual Kazakh was to be made into a single labor unit and applied to the land together with any desired number of labor units. His dispossession -- what the party fancied as his liberation -- was to be total: not only were his social values to be squeezed out of him, but he also had to be made into a Chinese, and in this denationalization process his ordeal considerably surpassed that endured by his Han "brothers."[50]

By the end of 1959 tensions were high as a result of a year of fierce and strenuous resistance to GLF policies. In September there were reports of an uprising in Usu (Wusu) near the Dushanzi oil fields and, in Yining (Ining) the following month in which many Chinese were killed, and government and party offices ransacked.[51]

As a result of instability in Xinjiang and Tibet caused by minority unrest, socio-economic dislocations caused by the GLF, and deteriorating Sino-Soviet relations, Beijing began to back off from its most radical policies. Moderation and gradualism toward minority assimilation became the key policy as Beijing became concerned over the security of its borders.

As well, Mao Zedong had resigned from his post as China's chief of state in January 1959, and had been replaced by Liu Shaogi whose pragmatic policies were beginning to temper the radical aspects of the Great Leap.

Another factor which kept Xinjiang from boiling over into open rebellion was the moderating effect of two key personalities. The first, Seypidin, who as head of the Xinjiang Provincial People's Government, second secretary of the XUAR, and a Uygur had become the spokesman for policy emanating from Beijing. Having a non-Han elite explaining and justifying Han policy to fellow minorities had the effect of sugar-coating some bitter pills.

The other personality was Wang Enmao who had come to Xinjiang with Peng Dehuai's army in 1949. He had since risen to the position of First Secretary of the XUAR CCP and Commander of the Xinjiang Military District. Over the years he had built up a base of significant regional power and had maintained the personal loyalty of many troops which had served with him both before and after his move to Xinjiang. More importantly, he had an appreciation for minority problems and defense vulnerabilities of the region. As a result he attempted to insulate Xinjiang from some of the more radical policies emanating from Beijing. In order to maintain an air of loyalty to the center he often paid lip service to Party dogma and occasionally offered up a sacrificial cadre for rehabilitation.

1961 saw the official death of the Great Leap when, in January, the Party announced a full retreat from its policies. By then, however, the damage had been done and despite Beijing's efforts to mollify minorities through cultural recognition and a tolerant attitude, angered Uygurs, Kazakhs and other Muslim elements began to cross into Kazakhstan with the help of Soviet consular officials in Xinjiang. Exploiting minority unrest Soviet officials were issuing passports to disgruntled minorities and, as well, had stepped up propaganda broadcasts which told of the good life on the other side of the border.

On May 26, the Chinese reacted by closing the border which only incensed the minorities further. On May 29, a large number of Uygurs and Kazakhs demonstrated before government offices in Yining and chased Party employees from the premises. They then staged an anti-Han demonstration which was dispersed with gun fire by government troops. The demonstrators fled to the Soviet consulate in Yining for aid but were refused. As a result Chinese officials ordered the closure of both the Yining and Urumqi consular offices.[52]

By the time the crises subsided in the late summer, some 62,000 people had fled Xinjiang. Although the incident had incensed the local population and similar riots were reported elsewhere in the region, the seriousness of the situation was lessened somewhat by the earlier retrenchment measures in the commune movement, relaxation in the radical economic policies of the GLF period, and the strategic retreat in the

Party's nationalities policy. The most significant result, in the end, was the complete exclusion of direct Soviet involvement in Xinjiang. The border was closed and further militarized, the population along it was largely relocated, Sino-Soviet trade in Xinjiang dropped sharply, and the planned railway link between Urumqi and Aktogai on the Soviet border was left uncompleted. Chinese control in the Yili area, which had so long been a pro-Soviet enclave on Chinese soil, was thenceforth unquestionable.

Throughout 1963 the Soviet Union intensified propaganda broadcasts which vilified the CCP and its minority policies. Xinjiang authorities countered this propaganda by emphasizing the Party's concern for the minorities' livelihood and economic prosperity. As well, they proclaimed that minority nationalities would be allowed to use their own written and spoken languages and that their customs and habits were to be respected. And, almost as if foreboding the next great political storm to be unleashed from Beijing, the minorities were told to heighten their political consciousness and revolutionary vigilance and engage themselves in a ruthless struggle against internal and foreign class enemies.

Never out of the picture, Mao Zedong emerged from political seclusion in late 1962, to launch what came to be known as the "Socialist Education Movement." The new campaign was an attempt to counter the bureaucratization of Chinese political life, reverse socio-economic policies that Maoists

condemned as "revisionist" and believed were creating new forms of capitalism, and revitalize a collectivistic spirit and consciousness both within the party and in society at large.[53]

Initially, as this campaign was aimed at bureaucratic reform within Party and government, it had little impact on Xinjiang. But later, as the movement evolved into a power struggle between Maoists and the "revisionist" forces of Liu Shaoqi and Deng Xiaoping, it assumed the trappings of another radical movement designed to keep China in a state of "permanent revolution." As such it was only a matter of time before this new wave of Han socio-economic extremism was to imprint upon the minorities of Xinjiang.

Starting in 1965, the UFWD, coordinator of minority policy, came under increasing attacks by Maoists. Initially, these attacks were limited to charges of capitalism against its director, Li Weihan. However, in 1966 the whole organization came under assault for being a screen behind which Liu Shaoqi and his agents had pursued their allegedly capitualistic schemes. Liu Chun, deputy director of the UFWD, concurrent vice-chairman of the NAC, and president of the Central Minorities Institute was accused of collaborating with Liu Shaoqi's plot. Wang Feng, another prominent member of the UFWD and NAC, and later Xinjiang Party First Secretary, was removed from all positions including first secretary of the Gansu Party Committee.[54]

In addition to organizational and personnel shakeups, a radical tack reminiscent of the GLF days, began to appear in minority policies emanating from Beijing. Propaganda was stepped up emphasizing material progress and general solidarity. Concurrently, a campaign was launched against counter-revolutionary and revisionist activities among the nationalities. Wang Enmao whose position within the party was becoming more tenuous had to pay attention to the increased tempo of "building class struggles" and, yet, mindful of border security problems, had to tread lightly with minorities.

In 1966, the brunt of the now declared Great Proletarian Cultural Revolution began to be felt in Xinjiang. Red Guards began to pour into the region armed with "little Red Books" and "Mao Zedong thought." Although minority participation was nil, local Han radicals came forward to join with the arriving Red Guards in criticizing Wang Enmao and existing minority policy. Quoting Mao's statement that nationality struggle was in essence simply class struggle, these radicals sought to solve nationality problems accordingly. Groups of Red Guards vowed to destroy vestiges of ethnic diversity: temples were destroyed, various religious observances were interferred with, broadcasting in minority languages was sharply curtailed, and many minority leaders were purged for pandering to reactionary customs and habits.[55]

Fortunately for the minority groups, concern was openly voiced that stirring up ethnic animosities would only serve

to further weaken border defense. With the urging of Zhou Enlai cooler heads prevailed and Red Guard groups who attacked minorities leaders were ordered to desist.

For the remainder of the GPCR its impact on Xinjiang's minorities was minimal in comparison to other regions of China. What it basically boiled down to in Xinjiang was a power struggle between the long-dominant regional leadership of Wang Enmao and the Mao-Lin Biao faction in Beijing that was largely played out by Han actors. Changes that did occur were by in large Han personnel, Han institutions and Han party policies.

Wang Enmao, long an open critic of Red Guard attacks and radical policies, lost his power struggle and was forced out of power in mid-1969. He was replaced in party and military tasks by Long Shujin -- a Mao partisan and chairman of the Xinjiang Revolutionary Committee,* and in government, by Seypidin (still the "survivalist"). In reflection of the waning period of the GPCR, Long Shujin's leadership was marked by a decline in radicalism even though the minorities continued to be reminded through mass criticism of their responsibilities to socialism.

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*Revolutionary Committees with their "triple alliance" of mass revolutionary organizations, pro-Maoist Party cadres, and the army were proclaimed in 1967 as the only appropriate form for the reorganization of political power.[56] Xinjiang's Revolutionary Committee was established on September 5, 1968 under the chairmanship of Long Shujin.

This Long-Seypidin leadership lasted until the Lin Biao affair in 1971, at which time Long and other suspected pro-Lin elements, were either removed from power or their role in regional affairs drastically reduced. Increasing numbers of cadres loyal to the new Mao-Zhou Enlai coalition in Beijing were transferred to Xinjiang to fill posts they left vacant. Significantly, cadres who had previously held high posts in the regional hierarchy under Wang, but who had been purged or criticized by Red Guards, were rehabilitated in greater numbers after 1972.

Following the brief interim of collective rule by these cadres a new regional leadership headed by Seypidin was officially sanctioned by Beijing in the autumn of 1973. The new leadership was not dominated by any one individual, nor was it monopolized by any single factional group, military or otherwise.[57] A period of tolerance and gradualism was ushered in as Seypidin's leadership reflected the more rational attitude of Zhou and the rehabilitated vice premier, Deng Xiaoping. With the exception of the brief anti-Confucian campaign which was instigated by the "Gang of Four" in 1973-74, this atmosphere of normality continued on through 1976.

However, it cannot be said that from a minority's perspective conditions returned to normal. In the wake of the GPCR Han leadership remained as entrenched as before, PLA presence increased along the borders due to continued Sino-Soviet tension, and amongst the population remained a large number

of Han youth who were permanently relocated during the previous ten years. Additionally, the radical swings in Han policies had done little to enamor minorities' sentiments toward their Chinese Communist "brethren."

D. 1976-1981: MAO'S DEATH AND A PRAGMATIC TURN IN POLICY

With the deaths of Zhou Enlai in January and Mao the following September, 1976 proved to be an extremely crucial year as far as China's future was concerned. After Zhou's death there was an immediate struggle for power between the radicals and Deng Xiaoping to determine Zhou's successor as premier. Apparently neither Deng nor the radicals could generate enough support, and the position went to the relatively unknown Hua Guofeng, who was named acting premier in February. In April, Deng was purged and forced to leave Beijing altogether.

When Mao died, a second power struggle erupted as the radicals tried to have Jiang Qing named to succeed her husband as party chairman. On October 6, Hua, who had managed to rally support from the Minister of Defense and Mao's bodyguard, arrested 30-odd top radical leaders including the Gang of Four. With the mainstay of opposition in prison Hua had himself declared not only premier, but also chairman of the Central Committee of the CCP (succeeding Mao) and chairman of the Military Commission.

In July 1977, Deng was restored to his former posts as first vice premier, vice chairman of the party and chief of

staff of the PLA. Since that time Deng has moved to restore the state bureaucracy he and Liu had built up during the 1960's. This has entailed the rehabilitation of many officials purged during the Cultural Revolution.

In late July, Wang Feng was rehabilitated and brought into Xinjiang to fill the posts of second secretary of the Xinjiang CCP Committee and first vice-chairman of the Xinjiang Revolutionary Committee. In addition, he was made political commissar of the Xinjiang Military Region (XJMR).

> Wang Feng's appointment to Xinjiang reflected the general return to moderate policies following Mao's death and the smashing of the "Gang." Being both a Han national and an expert in minority affairs, his position as the number-two Party man in the region was of the utmost importance ... Significantly, Wang's post of XJMR Political Commissar made him the leading Party figure within the regional military establishment. In this position ... he ... was able to oversee the activities of his Han and non-Han counterparts.[58]

In early 1978, for reasons not yet made clear, Seypidin was stripped of his posts in Xinjiang. On January 31, 1978 it was announced that Wang Feng had assumed Seypidin's posts of Xinjiang Party First Secretary, Chairman of the Xinjiang Revolutionary Committee, and XJMR First Political Commissar.[59] The wily survivalists' luck had finally run its course.

With Deng's return came a return to "normalcy" in minority areas. Deng, who had participated in and supported Zhou Enlai's rational approach toward minority relations, began to rectify the damages done over the previous two decades. The first step was the ratification of the 1978 Constitution on

March 5. Article 4 guaranteed the various nationalities equality, freedom from discrimination, right to autonomy, and the "freedom to use and develop their own spoken and written languages, and to preserve or reform their own customs and ways."[60] Articles 38 through 40 further delineated the organs of self government in national autonomous areas. Although not as detailed as the 1954 constitution, the 1978 document guaranteed far more rights than its 1975 predecessor which didn't even allude to minority representation in their own region's governmental organs.

More important than the ratification of the constitution, however, was Deng's intention on its enforcement. As a leader Deng was more than aware of the need to bring the minority nationalities within the mainstream of Chinese life. As a pragmatist he was conscious too of the need for stability and avoidance of hostility within the minority regions which, in many areas, bordered the Soviet Union and were defensively vulnerable.

Demonstrative of Deng's intent was the reestablishment in early 1978 of the minority affairs bureaucracy -- namely the Nationalities Affairs Commission -- which had been defunct since the Cultural Revolution. From May 22 through June 7 of 1979 it convened its first enlarged conference with Yang Jingren (a Hui) as its minister.

Measures passed included:

1. To provide assistance in cultural and economic construction in minority areas.
2. Increase capital construction in minority areas with motor vehicles, tractors, and rolled steel.
3. Make available manpower and technical assistance.
4. Education departments were to train more minority cadre and technicians.[61]

In June, the Xinjiang Party Committee met and decided on new regulations that would allow minority peasants and herdsmen to keep more animals and set aside more land for peasant use. For example, those minorities engaged in animal husbandry were allowed to keep three cows, two horses, and fifteen sheep. Those engaged in orchard cultivation were allowed .02 hectares of fruit trees for their own use.[62] Not only was this in line with spirit of "private plots" in China Proper, it was also reflective of the special requirements of the minorities.

If 1979 was a year of rebuilding a minorities affairs program and recognizing the different needs of the autonomous regions, then 1980 was a year of tying minority nationality policy to the broader goals of China -- specifically, the four modernizations. In January 1980 this theme was reflected in radio broadcasts which made statements such as:

> There are abundant resources in the minority regions of our country. There are plentiful material reserves for our four modernizations ... In order to promote the four modernizations we must unite with the people of the minorities to further exploit, use and protect the rich resources in the minority regions in support of the country's construction.[63]

In February the Xinjiang Ribao printed an editorial under the title of "Do Nationality Work Well, Speed Up the Four Modernizations." It called for a realization of the four modernizations through implementing the Party's policies on nationalities. It also stated that there were 120,000 minority nationality cadres in Xinjiang or ten times the number in 1950 and that the regional and prefectural people's governments were headed by nationalities cadres.[64]

As if to give Beijing's minority program legitimacy, Zhou Enlai's nationality speeches and programs from as far back as 1957 were resurrected and given wide distribution. As Deng's minority policies were basically patterned after those of Zhou's this created a sense of continuity of Han concern that was broken only by the scurrilous deeds of the gang of four.[65] Of course, accompanying Zhou's revival was an ongoing campaign of mass criticism of the gang.

In accordance with the religious rights of the new constitution Xinjiang saw a reopening of its mosques and a revival of China's Islamic Association which had last met as a congress in 1963. In 1979, 16 Chinese Muslim's were permitted to make a pilgrimage to Mecca -- the first to do so since 1964.[66] In August 1980, Beijing hosted over 600 Muslim cadres in an Islamic festival which was repeated in various Islamic regions throughout China including Xinjiang. Although this new tolerance for religion did not give rise to a wave of Pan-Islamism in China it, nonetheless, served notice to minority leaders

that there was more than words to Deng's nationalities program.

In the field of education, it too, experienced revival and rebuilding. By 1980 it was reported that in Xinjiang eight schools of higher learning had been reinstated and an additional two institutions established since 1978.[67] Total college enrollment of minority students was placed at 40,000.

A Beijing Review article in November 1980, went on to say that minority students were admitted to colleges with admission scores 10-20 points below those required of their Han counterparts. Additionally, entrance exams were being given in the minorities own languages, and at institutes of higher learning in autonomous regions minimum quotas for minority students were being set.[68]

As China enters 1981, Deng's policies in the area of nationality affairs seem, from all outward appearances, to be sincere in motive and accepted by the various nationalities. Although Deng's sincerity is undoubtedly motivated more by his concern over the stability, defense, and development of the border regions than by his compassion for minorities, his policies have obviously created a welcomed atmosphere of tranquility for the various nationalities. After all, the four years since the 1976 overthrow of the gang of four has been the longest period in 25 years in which they have been free from any Han-inspired social upheaval.

When Enders Wimbush, a Soviet Central Asian minorities expert, visited China in the Summer of 1980 at the invitation of the Chinese, he found them to be extremely concerned and dedicated to resolve their minority problems. After conducting a talk and discussion at the Central Institute for Nationalities in Beijing he was invited to repeat the presentation at a similar institute in Urumqi. His topic was on Soviet policies towards and problems with their Central Asian minorities.

During his visit, Wimbush also noted that there was a drive to rehabilitate old university professors -- nationalities experts -- and that they were being directed to train a new generation of experts. He also learned that propaganda broadcasters designated for work in Xinjiang were being segregated from the general propagandist departments in Beijing for specialized training. Overall, Wimbush came away from his trip with the feeling that Beijing was launching a heightened effort at resolving China's nationalities' problems and that the Soviet move into Afghanistan was assisting that effort.[69]

From a minorities perspective, Galen Rowell, a noted adventurer/nature photographer recently returned from climbing Xinjiang's Muztagata peak, found Kirgiz herdsmen to be content with their way of life and pleased at social/economic results of the new policies. He also noted that the Kirgiz tended state animals along with their own and were able to move about on grazing land with their extended families

intact[70] -- a far cry from conditions reported by Moseley some years earlier.

Of course, these reports are not meant to imply that China's minority problems are over -- far from it. They do, however, reflect the fact that the Han are making progress towards these problems and that the minorities are gaining from it and, therefore, finding Han presence more palatable. Old animosities die hard. For years to come the hatred and distrust which has been nurtured for centuries will remain just below the surface awaiting provocation. It will take a generation or two of regional stability and mutual respect to overcome these ingrained feelings. One thing that Deng has working for him, however, is that with a hostile Soviet Union just across the border, the minorities need the Han almost as much as the Han need the minorities.

IV. XINJIANG'S RESOURCE CONTRIBUTION

> It is to the Northwest - remote, severely inhospitable, thinly populated (less than 7 percent of the total), un-industrialized (less than 5 percent of gross industrial output) and still only tenuously linked to the rest of the country - where the Chinese will have to turn for their future fuel needs...otherwise it...will...be extremely difficult to keep China's energy consumption on its fast, and much needed exponential rise.[71]

When one speaks of Xinjiang's strategic resources one has to address the matter in terms of potential and of future prospects. Xinjiang today is to the Chinese what the Western Territories were to the United States in the mid to late 1800s - vast and rugged, full of potential and promise, and no less strategically important.

Containing over one-sixth of China's total landmass it can be said that far more remains unknown than its currently known about what this land possesses in terms of resources. Over the years two factors have contributed to this lack of knowledge. First, the Han Chinese have, until recently, found resources in sufficient quantity in the east to satisfy their industrial needs. Secondly, Xinjiang's remoteness and China's poor transportation network have precluded any major resource exploitation in the region from serious consideration.

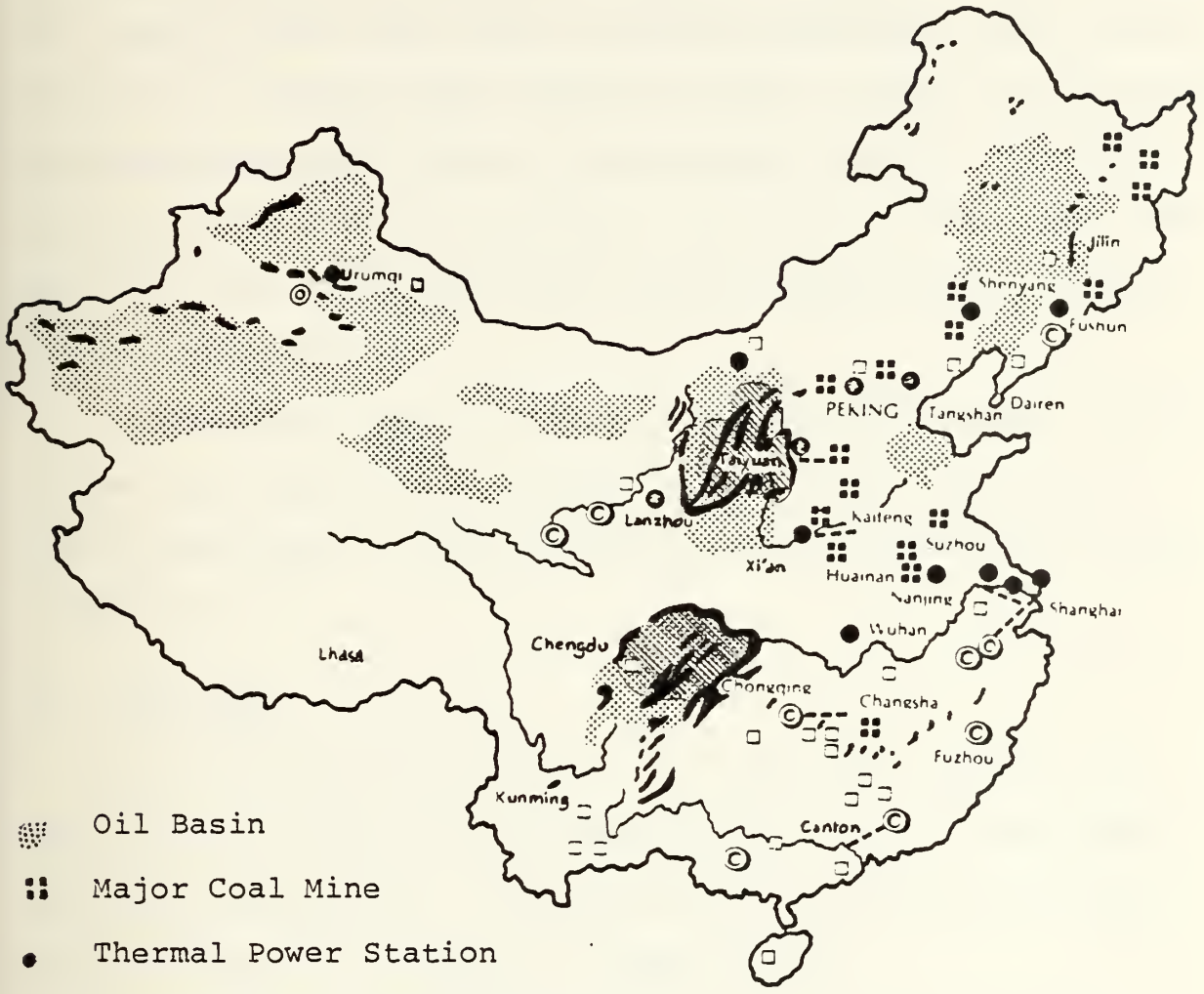
Today, however, a renewed interest in Xinjiang is being generated as China finds itself caught in a vicious and oft

times frustrating cycle of modernization. In order to achieve its modernization goals the PRC requires petroleum, coal, iron, and a host of other resources to support industrialization. In turn, China is in need of expensive foreign technology and equipment to insure its industries are modern, efficient and capable of meeting the demands of one billion people. To pay for these imports China has begun exporting its mineral wealth which has consequently generated increased demands for still greater efficiency in the discovery and development techniques of the resource extraction industries which are now burdened by both domestic and foreign demands.

In this light Xinjiang's resources which have been relatively neglected take on a greater importance. This section will examine three major energy resources - petroleum, coal, and hydroelectric - China's "energy triad." Each will first be discussed in terms of its development - current and future - within China's overall energy picture (see Figure 4.1). And secondly, an analysis of Xinjiang's potential contribution of each will be made. Petroleum, because of its impact on China's present-day energy position, will receive the bulk of attention.

Before proceeding a caveat should be stated regarding the accuracy of reserve estimates in China. For both political and military reasons Beijing has been fairly secretive about the location and size of its strategic resources. Over the years, data has been published at erratic intervals and is often propagandistically inflated. Many times when statistics

DISTRIBUTION OF FUELS, POWER, MINERALS AND METALS



Oil Basin

Major Coal Mine

Thermal Power Station

Hydroelectric Power Station

Transmission Line

Mineral or Metal Deposit Area

Coal Deposits (near surface)

Coal Deposits (deeply buried)

Figure 4.1

Source: Selig S. Harrison, China, Oil, and Asia: Conflict Ahead (New York, New York: Columbia University Press, 1977) and DuPre Jones, ed., China U.S. Policy Since 1944 (Washington, D.C.: Congressional Quarterly, Inc., 1980) p. 370.

are released they are published as percentages of preceeding year totals which may or may not have been made public. Western experts have often had to estimate production and reserve figures for several years running based on their own appraisals of predicted growth rates. For Xinjiang, reserve statistics have been even more of a problem since the Chinese themselves have not been completely aware of what resources are present and in what quantity.

Fortunately, this is rapidly changing as both the Chinese become more involved in Xinjiang and as foreign personnel participate more in the exploration and development of China's resources.

A. PETROLEUM

Of the three energy sources petroleum has received the most notoriety though it has been fraught with vicissitudes in reserve estimates. Statements such as those that follow have typified the industry in recent years:

> "Prospects are that exports can reach 50 million tons in the early 1980s and 100 million tons by 1985."
> - K.P.Wang - writing for Bureau of Mines, U.S. Dept. of the Interior, 1975.

> "There just isn't as much [oil] as we thought there was."
> - Kiyokawa Yuji - Japanese Commercial Consul, San Francisco, 1980.

> "China's biggest problem is that even the Chinese are unsure of what they have in the way of oil."
> - Jonathan Pollack - China specialist, RAND Corp., 1981.

China's rise to major oil producer status has been a recent phenomenon with serious production having only begun

since the 1960s. Prior to that time PRC petroleum needs were satisfied by Soviet imports. Reflective of China's latecomer status in the petroleum business is the fact that until the mid-1970s coal consumption was the emphasized industrial fuel with liquid petroleum providing for the needs of basically transportation and agriculture.

In these formative years China's domestic production was limited to oil fields in western China - namely, Yumen and Dushanzi (Tu-shan-tzu) in Gansu and Xinjiang respectively. Both fields were developed with Soviet technology and equipment in the 1930s. When the two large fields of Daqing (Ta-ching) and Shengli first came into production in the east in 1960 and 1962, China's total petroleum production amounted to less than 6 million tons.[72]

Daqing and Shengli, however, heightened Beijing's hopes of becoming self-sufficient and marked the real beginning of China's petroleum industry. Because of the enormity of these field's potential reserves and the closeness of their location to China's industrial heartland, work in the western fields came to a virtual standstill as skilled labor was moved east to work the more lucrative and promising fields.

Unfortunately, 1960 was also the year Moscow withdrew its technicians from the PRC including those involved in the budding petroleum industry. With them went years of experience, technology and equipment - a definite setback for Beijing's drive toward petroleum self-sufficiency.

Never one to let a small thing such as a lack of technology impede progress, and a firm believer in the ability of sheer manpower to overcome all odds, Mao Zedong pressed ahead and "learn from Ta-ching" became a symbol of industrial achievement through self-reliance. Although it took five years to bring Daqing to an annual output of 11,000 bd (barrels per day), China was on its way to becoming a major oil producer. In 1967, the Dagang oilfield in Hopeh Province came into production and together Daqing and Shengli became known as the "Big Three." By 1975, the "Big Three" were accounting for 80 percent of China's petroleum output.[73]

With the Western World scrambling for alternative sources in the wake of the 1973-74 Middle East oil crises and tighter supplies conducive to higher prices, Beijing intensified its petroleum search with renewed fervor. With Japanese technological assistance in the main, China started to shift its emphasis from onshore to offshore.

Preliminary geological reports dating back to the 1950s indicated that China's continental shelf contained oil basins in the East China Sea and those which extended from onshore in the northeast into the Bohai Gulf and Yellow Sea.[74] In 1968, a United Nation's geophysical survey had concluded that the, "Continental shelf between Taiwan and Japan may be one of the most prolific oil and gas reservoirs in the world."[75]

Because of its shallow depth, proximity to both port facilities and domestic industrial consumers, and the extent

of previous geological research conducted in the gulf, the Bohai was the most logical starting point for China's offshore effort.

By 1972, Beijing already had at least five and possibly as many as eight offshore rigs in use in the Bohai.[76] These rigs were initially fixed platforms in the shallowest water. As the search for oil extended to deeper waters China found drilling requirements increasing as well. While maintaining the image of self-reliance Beijing found several oil dependent nations willing to covertly supply technology through rig plans and models.[77] Indigenously produced drilling rigs and platforms with striking resemblance to foreign equipment began to make their appearance off the China coast.[78] With the normalization of relations with Japan that same year, Beijing openly negotiated for at least one foreign "jackup" rig* through Tokyo channels.[79]

Utilizing its own fleet of oceanographic ships and seismological expertise, and Japanese technology China began probing the depths along its entire continental shelf. From these geological probes came exhuberant reports of massive offshore reserves from both the Chinese and Japanese which were later found to be overly optimistic. Beijing's

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*Jackup rigs are towed to location where their legs are extended to contact the sea floor. The platform is then jacked up above the surface. The rig itself supports storage capacity, living quarters, work and service facilities, laboratories, and helidecks.

exaggerations emanated from their desire to lure Japan away from lucrative joint ventures in Siberia and Sakhalin being offered by the Soviets. The Japanese, on the other hand, were inflating reserve estimates in an attempt to improve their bargaining position vis a vis OPEC and Western suppliers. This, coupled with the Western World's anxious desire to cultivate new petroleum sources, resulted in China being deluged by major oil company's offers of assistance in hopes of getting their feet in the door of this unfolding drama of oil discovery.

In pursuing their "learn from Ta-ching" spirit, the Chinese selectively held the Western majors at bay while allowing in Japanese and French assistance. They carefully shopped abroad for drilling technology and equipment, purchasing only that which could not be produced indigenously. By 1977, the Chinese had ten drilling rigs in operation off their coast including those locally produced or constructed in Japan or Singapore. They ranged in complexity from simple barges to catamarans and jackups. Additionally, Beijing had contracted out to Norway to build a semisubmersible rig that was capable of deep water operations.[80]

In the flush of success at finding new fields China began to convert many of its factories and power stations from coal to oil consumers. As well, Beijing was confident enough to embark upon its ambitious Fifth Five-Year Plan (1976-1980) and invest heavily in imported equipment and technology. Oil

exports began to expand as China shipped one million tons of crude to Japan in 1973, 4 million tons in 1974 and 8 million tons in 1975. Projections for oil exports to Japan by 1980 were set at 25 million tons.[81]

However, by the mid-1970s, many Western observers who had been skeptics from the outset began to openly question Chinese estimates and projections. In 1975 the Central Intelligence Agency published a study in which China's potential as a major exporter of oil was seriously questioned. Its conclusions were, first, if the PRC maintained an 18 percent annual increase in the growth of its petroleum industry it would have to do so at an enormous expense to other sectors such as agriculture and industry. And secondly, China, unlike the mideast OPEC countries had a burgeoning population which in itself could absorb much of its "excess" petroleum. And lastly, even if China could sustain its current growth rate of 18 percent and hold down domestic consumption, by 1985 it would be in a position to export only one-tenth of the oil exported by OPEC in 1974.

> This is hardly in keeping with the image of a country whose potential oil reserves have been compared with those of the entire Middle East. In fact, it underscores just how inapt these comparisons really are.[82]

In 1978, Fred Hershede and Mihssen Kadhim published an article which projected 1980 and 1985 petroleum exports to be 23 and 31 million tons respectively. They concluded, as did the CIA study, that a massive infusion of investment

capital into petroleum which would be required to maintain substantial growth would decelerate growth in agriculture and industry.[83]

That same year, Randall W. Hardy in his monograph, China's Oil Future: A Case of Modest Expectations, discussed another potential limiting factor to China's oil production - that of geology.

> With few exceptions, most of China's potential oil areas are in continental lacustrine basins. In eastern China these basins are characterized by a large number of highly fractured possible stratigraphic traps...The principle result of such a geological setting is great variability in reservoir distribution and in porosity and permeability within each basin. Rather than large reservoirs which are easily located and exploited, Ta-ching, Sheng-li, and Ta-kang all appear to have oil in an unpredictable series of smaller pockets at various depths.[84]

Hardy's thesis was not that China was wanting for oil, but rather, because of the geological formations in which Chinese oil is currently found, future exploration for oil would have to be intensely conducted over vast onshore and offshore locations, and at varying depths which require increasingly more sophisticated equipment and technology. This he translated into an expensive venture resulting in oilfields with many low-volume wells extracting widely dispensed pockets of oil. He went a step further than the previous studies by concluding that Beijing had neither the technology nor the capital required for such a venture.

Despite pessimistic reports, China pressed on with its efforts. By 1979's end, China's fleet of rigs had been

expanded to twenty including those under construction.[85] Additionally, the Bohai Gulf and Yellow Sea were apportioned between Japanese, French and British consortiums under the guidelines set forth in "risk contracts." These Chinese contracts called for foreign contractors to share in the cost in exploration and development in return for a share of the eventual output of oil.

The Japanese, confident of China's oil prospects, signed an agreement in February 1978, which called for the purchase of 9.5 million tons of Chinese crude oil in 1981 and 15 million tons in 1982.[86]

Despite surface appearances, China's oil boom had begun to show signs of serious problems - some subtle and others not so subtle. Since 1972, production increase percentages for Daqing had, with the exception of 1974, been declining. The Chinese also acknowledged problems with the Shengli fields:

> [Drilling]...is troublesome, with formations suddenly soft and suddenly hard. Small reservoirs are spread out in unpredictable patterns in the widely scattered active areas. Underground permeability and pressure conditions vary. In production, some reservoirs are pumped, some water-injected, and some are fractured or acidized to promote a flow of oil through the reservoir rock. The field's management and personnel reportedly are still overwhelmed by the problems related to inconsistency in characteristics of oil produced and water and salt removal.[87]

Dagang, last of the "big three" fields, is situated but 50 kilometers from Shengli and believed to have geological formations similar if not more fractured than Shegli. Moreover, geologists estimate the Bohai to be an extension of the Shengli

and Dagang basins and, therefore, oil production there is likely to be plagued with many of the problems associated with its onshore counterparts.

Compounding matters was the fact that as China extended its search beyond the shallow depths of the Bohai and into more promising, but deeper waters of the East China Sea and Gulf of Tonkin the cost of drilling began to skyrocket due to the increased sophistication and complexity of required equipment. As an example, a semisubmersible drilling platform which is more suited to the greater depths involved and can withstand the typhoon-prone weather of these regions rents for $30,000 per day or, if purchased, can cost in the neighborhood of $50-80 million.[88] A less complex jackup rig cost at least $20-50 million to construct. These costs merely reflect the price of the basic equipment required in the drilling of test wells. China Business Review recently estimated that China's offshore fields could run between $500 million and $3 billion to develop.[89] These figures include the price for daily supply/support for rig personnel, hiring foreign technicians to provide technological assistance for the increased sophistication of deepwater equipment and methods, plus the purchase of production platforms (which require a three-year lead time to construct), and installation pipeline which range in cost from $375,000 to $850,000 per mile. For a country struggling to modernize this is a staggering amount.

Almost symbolic of Beijing's mounting petroleum troubles the Japanese-built jackup rig, Bohai II, capsized and sank during a storm in November 1979, while being moved to a new drilling site. In true Deng style of "seek truths from facts," the incident became a national campaign - "Learn from Bohai II." In the court hearing which followed it was brought out that not only had there been negligence involved, but the whole petroleum industry was lacking in technical and managerial expertise. Management was blamed for cutting corners and ignoring safety standards. As a result of the hearings the Minister of Petroleum, Song Zhenming, was fired.[90]

Contributing to China's petroleum development woes has been the fact that just as the industry began to invest heavily in offshore exploration and production China's economic reins were simultaneously pulled back by Deng. By 1978, China's modernization effort had become plagued by major imbalances in various industrial sectors. As heavy industry attempted to meet goals set by the certain subsectors including petroleum, coal, electric power, transportation, building and a number of raw materials failed to keep pace. The result was an acute shortage of fuel, power and some key raw materials throughout industry accompanied by transportation bottlenecks. causing factory closures and underutilization of capacity.[91] China had discovered that during years of emphasis on heavy industrial development scant attention had been paid to the light industrial sector which was now

proving incapable of providing an adequate infrastructure to support the modernization effort.

It became apparent that China's economy was adrift in a sea of modernization (including the petroleum industry). The "Four Modernization" (agriculture, industry, national defense, science and technology) goals were proving over ambitious, especially in regard to payment for and absorbtion of the projected volume of technologically sophisticated imports. Consequently, the Ten-Year Plan was scaled down and attention focused on a comparatively short transitional period (1978-80) called the period of "Readjustment, Restructuring, and Consolidation."

The aim of this readjustment period has been threefold: correction of industrial imbalances, the restructuring of the country's overall economic planning, and elimination of inefficiency in the management of enterprises. A major result of this period has been the reevaluation, cutback and cancellation of many joint projects with foreign governments. The Japanese, who have invested the heaviest in China's modernization have been hit the hardest with billions of dollars in projects and contracts having been trimmed or scrapped altogether by Beijing.

Indicative of both economic slowdown and problems within the petroleum industry itself was Beijing's announcement to Japan in September 1980, that China would not be able to fulfill its oil export commitment as outlined in the February

1978, agreement. The announcement by Zhao Ziyang stated that although coal exports commitments would be met, petroleum exports would be reduced from 9.5 to 8.3 million tons in 1981 and from 15 to 8.3 million tons in 1982. The reasons given were that initial production targets were far from attainable and that China's crude oil production was leveling off and would possibly decline despite a rise in domestic demand.[92]

In view of the major role Japan has, until now, played in China's modernization, and the resultant strain these cancellations and cutbacks have imposed upon their relations it is highly doubtful Beijing would arbitrarily restrain oil exports if the oil was available to ship. Those export dollars are a vital part of China's balance of payments with Japan who has thus far been its most generous foreign "bankroller," supplying enormous loans, and technology and equipment transfers.

China is thus faced with a dilemma of major proportions - it needs an increasingly larger supply of oil for both domestic industrial expansion and to pay for foreign imports at the very time the oil industry is encountering difficulty in expanding output. Exacerbating the situation is Beijing's phobic aversion to incurring large balance of payments deficits. In essence, they are unable to meet both domestic and foreign demands with existing production, and with a reluctance to incur a large debt they lack the capital to develop new sources.

In response to this dilemma Beijing has done three things. First, with regard to offshore development, China has seemingly compromised and will selectively open contract bids to foreign contractors for the development of oil fields in the Yellow and South China seas. At present, sixteen companies have signed agreements with China for geophysical surveying with an additional 30 corporations from nine countries having already helped underwrite part of the survey costs in return for the resultant data.[93]

Secondly, China has taken a long look at its policy of converting industry from consumers of coal to oil and recent reports indicate this policy has been reversed. This will be discussed later in more detail.

The third avenue China has pursued is the renewal of its onshore search for oil - particularly in its northwest regions. Over the last year and a half the Chinese have been conducting geological and seismic survey in the northwest with increased vigor. In August 1979, Beijing "invited 20 major oil companies from eight countries to discuss the exploration and development (through risk contracts) of several onshore oilfields. These included the Junggar and Tarim basins in Xinjiang; the Qaidam Basin in Qinghai; Erdos in the Shaanxi-Gansu-Ningxia-Inner Mongolia region; the Sichuan Basin, Guizhou, and Yunnan; northern Jiangsu Province; Dagang; and other small fields."[94]

Two companies - Compagnie Generale de Geophysique (CGG) of France, and Geosource of Houston - have been selected to conduct seismic surveys in China's Xinjiang and Qinghai provinces.[95] In October of 1980, the Chinese conducted their own cross sectional survey in the Tarim Basin and concluded that conditions were good for reserves of petroleum and gas.[96]

1. Return to Xinjiang

Thus, in less than thirty years China's quest for oil has been full circle. As fields in the east level off in production growth, and with the escalating cost of further offshore exploration and production, development of the northwest reserves is becoming more plausible and enticing. Let us now examine what Xinjiang potentially has to offer in the way of petroleum resources.

To begin with, there are three major oil basins located within Xinjiang and another in the neighboring province of Qinghai. Because of its proximity and demographic similarities to Xinjiang it will be included in this study.

a. Junggar Basin

Source of China's first major oil fields, the Junggar Basin in northern Xinjiang holds two key fields - the Karamay and the Dushanzi. Because of the outflow of technicians in the 1960s these fields have never been fully exploited.

The Dushanzi field, located at the northern foot of the Tien Shan, was first developed in 1938 by Soviet engineers as a joint project between the Chinese Warlord Sheng Shicai and Moscow. Prior to the opening of the eastern fields Dushanzi was believed to be the richest single oil field in China with recoverable estimated at 850 million tons.[97] All the same, with 30 wells having been drilled by 1942 output remained limited with only 2,500 tons produced that year. With Soviet assistance the field's output was increased to an eventual 94,500 tons by 1957 - a meager amount for a field that had China's oil hopes pinned on it. As the Chinese have not updated that figure in recent years and because larger fields were discovered elsewhere, it is probable that Dushanzi's output increased little beyond the 1957 level.

Today, Dushanzi is known more for its two refineries (one of which was constructed with Soviet equipment) which have a combined capacity of over 2 million tons per year.[98] In addition, two pipelines were constructed between 1958 and 1960 linking the Karamay fields with the refineries. Having a length of 147 kilometers and diameters of 24 and 16 inches these pipelines are capable of respectively transferring 700,000 and 400,000 tons of crude annually.[99]

The Karamay oilfield to which the Dushanzi refineries are linked began official production in 1957 - again with the assistance of Soviet engineers. From an initial two wells producing an estimated 50,000 tons of crude per

year, this field has grown to an estimated annual output of over 3 million tons by 1975.[100]

Sediment thickness of this field was reported by the Soviets to be 2,000-3,000 meters with reserve estimates ranging from an initial 100 million tons to a later 350 million tons. The quality of oil reportedly has a low paraffin and sulphur content as well as a low freezing point (an important factor in pipelining oil across a region known for its bitter cold weather).[101]

In addition to the Karamay-Dushanzi pipeline oil is transferred via a 300 kilometer pipeline to a railroad in Urumqi where it is transported by train to refineries in Lanzhou. At present an additional Karamay-Urumqi pipeline is under construction which when completedwill reportedly triple the amount of oil shipped out of the region.[102]

Before Karamay fields can be expanded additional sources of water will have to be found. The Chinese now rely on the Manas River to provide water for oilwell injection - unfortunately the Manas has a habit of drying up during winter months.[103]

Another more resolvable problem seems to be a lack of technical expertise. In June of 1980, China's Oil and Gas Exploration and Development Corporation contracted with an American drilling company to provide specialized drilling services and well-control expertise. Utilizing Chinese equipment the Oklahoma based company will "conduct

directional drilling in the western part of the Karamay oilfield to try to clean up three blowouts the Chinese have been grappling with for several years."[104]

b. Tarim Basin

To the south of Karamay and across the Tien Shan lies the Tarim Basin. Occupying more than half of Xinjiang's land area the Tarim contains one of the largest and harshest deserts at its core - the Taklimakan. It also contains many of the same geophysical formations as the Junggar which are indicative of sizeable petroleum reserves. It is also believed to be China's most extensive sedimentary rock basin. Because of its expansiveness, sparse population, and harsh climate geological surveying has been rather limited. However, what surveying has been done has resulted in encouraging results. Three wells have been drilled since 1977 and "all are high yield, with high underground pressure and stable output, producing hundreds of tons of oil and nearly a million cubic meters of natural gas each day."[105] Chinese optimism regarding the basin is expressed by the fact they hope to produce 12 million tons of crude annually from the Tarim.

c. Qaidam Basin

Southeast from the Tarim lies the Qaidam Basin - another highly promising area for petroleum development. Although located in Qinghai Province, its main oilfields are situated in Lenghu which is only 35 kilometers from the Xinjiang border.

Located in the high altitude of the Tibetan Plateau, the Qaidam Basin, which the Chinese characterized as a "sea of oil," has been producing oil since 1956. By 1962 annual production of the field was 85,000 tons which was an eightfold increase since first opening.

In 1970, A.A. Meyerhoff, a noted oil geologist published a study which concluded that on a per-acre basis Qaidam Basin was the most prolific oil area in China. At the time, he estimated recoverable oil to be 1.1 billion barrels. He also reported that 18 moderate-size, large and giant fields had been discovered and that much of the promising areas remained to be tested.[106]

By 1975, the Lenghu area was producing 95 percent of Qaidam's oil with a goodly portion of output going to Xizang (Tibet). Lenghu itself had become a major industrial center boasting "a gasoline refinery and 150 factories and mines that produced petroleum and petrochemical products and also cement, iron and steel, and machinery."[107]

From Lenghu petroleum is transported to Yumen via a 350 kilometer pipeline where it is shipped east by railroad. There is another pipeline under construction that will connect the Qaidam Basin with Llasha in Xizang - a distance of 1,100 kilometers. As there is little industry in Xizang this pipeline is presumably being built to assure a reliable source of oil for Sino-Indian border forces. In the past oil, has been transported by trucks across arduous

mountain roads which was a costly endeavor with one-third of the oil being lost to spillage and consumption by the trucks.

d. Turpan Basin

A last area considered to be potentially rich in oil is the Turpan Basin. Other than preliminary geological surveys and limited exploratory drilling which has suggested the presence of substantial oil reserves, little has been done to develop these reserves. In 1970, Meyerhoff estimated Turpan's ultimate recoverable reserves to be 6.8 million tons.[108] This would bring Xinjiang's total, including Qaidam, to 373.6 million tons of estimated recoverable oil reserves (see table 4.1).

TABLE 4.1

TOTAL RECOVERABLE OIL RESERVES IN XINJIANG
(IN MILLION TONS)

Basin Area	Reserves
Junggar	120.0
Tarim	6.8
Qaidam	240.0
Turpan	6.8
Total for areas	373.6

Source: Figures are drawn from A.A. Meyerhoff, "Developments in Mainland China, 1949-68," American Association of Petroleum Geologists Bulletin, vol. 54, no. 8 (August 1970), pp. 1567-1580.

Although 373.6 million tons of crude does not equate to another Persian Gulf one must consider that these figures, although widely used today, are ten years old and derived from data which, in some instances, has not been updated since the 1950s. As modern methods are employed in China's intensified search for oil these reserve figures are bound to be revised upwards. For example, based on recent exploratory drilling and initial production results, Beijing is hoping to produce 12 million tons of crude annually from the Tarim Basin which was estimated by Meyerhoff to have a total of 6.8 million tons of recoverable reserves. This is not to denegrate his work, it is instead to demonstrate how little is known about the ultimate size of Xinjiang's reserves.

The point is that Xinjiang, based upon what is known thus far, has sizeable oil resources that can contribute to China's modernization - either as export to pay for technology or as fuel for its own industrial fires. It is, however, going to take investment capital to realize this potential. As with China's offshore fields sophisticated survey and drilling techniques, and equipment will be required to fully exploit the region. As well, existing transportation methods will have to be updated and vastly expanded. Transportation bottlenecks are one of the most critical problems besetting China's resource extraction industries today and this applies to all industrial sectors, not just petroleum. For instance in 1975, China's pipeline

system totalled just over 5,000 kilometers of installed and operating pipeline. In comparison the United States installed over 26,000 kilometers between 1972 and 1973 alone.[109] This problem will become especially acute as the Chinese either by choice or out of necessity turn to Xinjiang to meet its future energy needs. You can't support industry's voracious appetite by transporting oil via trucks which will spill and consume one-third of their cargo. Xinjiang is a long way from the east.

Additionally, refining capacity will have to be enlarged to handle the additional crude. At present it is estimated that China's refining capacity lags production by at least 20 percent.[110] How much more so if Xinjiang's reserves are fully exploited?

These are problems which the Deng government is grappling with and which will have to be worked out during the period of readjustment. China cannot continue building industries when, one, they can't provide the energy to run them and, second, there is no transportation system to distribute effectively their product.

B. COAL

As petroleum enjoyed its meteoric rise to energy fame, coal, a resource of giant proportions in China, has taken a backseat. At one time coal provided over 90 percent of China's energy needs, but over the past two decades this

percentage has dropped below 70 percent as petroleum assumed a greater share of China's energy market. During the 1970s Beijing, as mentioned earlier, made a major effort to convert its industries from coal consumers to oil users. With petroleum's rise having reached a plateau, however, the Chinese have reevaluated this policy and now appear to be reversing it. Officials who pushed for this conversion are now being accused of "acting too hastily" and of "putting their eggs in one basket," thus creating imbalances within the energy industry. Energy officials are now reexamining China's most abundant energy resource with an eye to China's uncertain energy future.

In Zhou Zhiying's* article, "The Economy Successes in 1980, Targets for 1981," published in December 1980, he states:

> Technical transformation will center around saving energy. Preparations will begin next year to renovate medium and low-voltage generating units which consume too much coal. Machinery with high energy consumption will be modernized. We had [sic] gone into large-scale conversion to oil fuel in recent years without a full knowledge of our oil resources. Now we are converting back to coal.[111]

1. How Much and What's Been Done So Far?

China's coal reserves are not known with much certainty, but all agree they are among the largest in the world. The spectrum of estimates is extraordinarily wide,

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*Zhou Zhiying is a bureau head of the National Planning Commission.

ranging from a few hundred billion tons to over 10 trillion tons. PRC published reports in the late 1950s referred to verified reserves of around 100 billion tons.[112]

The China Business Review recently reported, "China has verified coal reserves of some 600 billion metric tons and estimated reserves of some five trillion tons. Raw coal output in each of the last two years has exceeded 600 million tons, third after the Soviet Union and the United States."[113] According to Chinese sources the 1980 coal production target was met at 600 million tons.[114] Although high by world standards, 1980's output was actually a decline from the years 1978 and 1979 which produced 618 and 635 million tons respectively.

This reduction has not necessarily been due to depletion or lack of technical skills, but instead is probably reflective of the general economic readjustment period announced in 1978. Lowered production targets have been in line with Deng Xiaoping's effort to reassess unrealistic production goals and to bring them in balance with China's overall economic capabilities. To make up for the slow or negative growth in coal output, Beijing has aimed to cut consumption by improving conservation.

Additionally, Beijing plans on gradually increasing production through the opening of new mines and enlargement of existing mines. The preponderance of coal mines currently being exploited is located in the provinces of Shanxi,

Anhui, Hebi and Henan. Areas of major reserves yet to be developed are to be found in Huolinhe, Jilin, Junggar, Inner Mongolia, Yunlin, Sichuan; and four areas in Xinjiang.

2. Xinjiang's Potential

In the case of Xinjiang little has been published regarding its coal reserves. This of course has been due to the Chinese previously having little cause to exploit the regions resources. Up to now there has been more coal than China can effectively exploit right in the backyards of its eastern industrial centers. Secondly, Xinjiang has enough petroleum to power its limited industries without having to develop its coal resources.

As with petroleum, estimates of coal reserves have been wide ranging. In 1958, Chinese sources estimated reserves in the northwest* to be 280.7 billion tons.[115] In December 1979, it was announced that Xinjiang had known coal reserves of 4.46 billion tons of fine quality steam coal including 500 million tons of coking coal.[116] In mid 1980 Chinese sources published a report which placed Xinjiang's recoverable reserves at 15 billion tons.[117]

A further statement which graphically told of Xinjiang's abundance of accessible reserves appeared in a China Reconstructs article on January, 1981:

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*This includes: Inner Mongolia, Gansu, Qinghai, Shaanxi, and Xinjiang.

> [Urumqi]...actually rests on dozens of seams of coal - they are so difficult to avoid that the Kunlun Hotel was built right over one.[118]

In 1979 Jack Chen, author of The Sinking Story, wrote that at present there are modern coal mines in operation in Urumqi and Yining.[119]

Though not in the giant quantities found in Hubei, there are clearly ample reserves of readily accessible coal in Xinjiang. The importance of this fact is not that the region should or even could become a major exporter of coal. Without even leaving Xinjiang, its coal could play a major part in China's modernization.

By developing and retaining its coal, Xinjiang would be able to supply its own industrial needs for many decades into the future. In turn, its petroleum would be freed for shipment east for either domestic consumption or export. Because of the region's projected low energy requirements its coal could concurrently be developed to provide thermo-electrical power for China Proper. This could be accomplished through the construction of "pit-head power plants." This method removes the problem of transportation in that thermo-electric generators are built at the site of the coal mines. From there electricity would be transferred east via power lines - much less expensive proposition than constructing additional rail facilities. This plan appears to be gaining acceptance and has been discussed in recent Chinese press releases:

> ...A plan has been worked out to turn coal-rich provinces and autonomous regions gradually into power-supplying centers, each with one or more pit-head power plants.[120]

C. HYDROELECTRICITY

The last leg of our energy triad to be discussed is hydroelectric power. Although not a strategic resource in the sense that it can impact directly on foreign markets, be used as a foreign policy tool or measured as mineral wealth; it none-the-less is a potential that when harnessed can contribute greatly to a nation's industrialization, enhance GNP growth (i.e. world economic stature), and free other more exportable energy resources.

China is acutely aware of its hydroelectric potential which, at 370 million kilowatts recoverable, is ranked second to none by world standards. During the last decade Beijing invested heavily in hydropower, particularly in the area of small generating facilities. As of April 1979, 88,000 of these plants provided rural areas with a total of 5,380 megawatts of generating capacity.[121] Accounting for one-third of total hydro generation, these hydros provide not only power for local industries, as well as irrigation and drainage, food and fodder processing and timber sawing, small hydro reservoirs regulate water supplies, help prevent floods, and are used to breed fish and other aquatic products.

The decade of the 1980s the emphasis, however, will shift more toward medium and large facilities. Demonstrative of

this is the Gezhouba hydroelectric project being built at Gezhouba, near Yichang (Hubei Province) at the mouth of the Yangzi Gorges.

> There, 30,000 workers are building China's biggest hydro project, a scheme that will cost $2.3 billion and eventually produce 14 billion kwh of electricity a year. It is to be completed in 1986 after 16 years of effort. The importance of the Gezhouba is that it is a pilot project, a preamble to the bigger Three Gorges scheme 40 kilometers farther up the Yangzi. It is the first of China's new great walls.[122]

The Three Gorges project when completed will generate 111 billion kwh (or 40 percent of China's 1979 hydroelectric requirements) and will have cost an estimated $6.38 billion to complete. As large as this project is it represents just a portion of in-progress or proposed hydro facilities. At present there are 14 major projects under construction and an additional 13 in the development and planning stage.[123]

Yet, despite China's investment in hydroelectric power there is still a major shortage of electrical power in the industrial centers. As with other infrastructural sectors hydroelectric power has failed to keep pace with heavy industry. In recent years there have been reports of factories running at reduced capacity and of blackouts and brownouts becoming more commonplace. According to some experts this problem is likely to worsen and persist until the late 1980s when new hydro facilities become operable.

1. Xinjiang's Hydroelectric Contribution

Once again, when Xinjiang's contribution to China's hydroelectric resources are discussed one must speak in terms of potential. Heretofore there has not been the industrial development to justify large-scale hydro development. At present there is but one major hydroelectric plant in operation in Xinjiang. It is the Korla station located on the Konqi River just 15 kilometers north of the budding industrial center of Korla. With a planned 35,000 kw capacity it supplies electricity to Korla and the Tarim Basin.[124]

The next sizeable hydro plant is the Yutian plant which went into operation in November 1980. Located on the Keriya River in the southermost region of the Tarim Basin this plant has a 1,250 kw capacity which is expected to be increased to 3,150 kw with additional generators.[125] The remainder of Xinjiang's hydro plants are smaller in size, supplying power to individual small factories and rural areas for agricultural electrification.

Despite the limited scope of these facilities Xinjiang is not wanting in hydroelectric potential. Composed of two major drainage basins - the Junggar and the Tarim - the region is inundated with hundreds of small to large streams and rivers which have their headwaters in the towering mountain ranges that both surround and bisect Xinjiang. From the Kunlun flows the Qaraqan, the Keriya, and Karakax; from the Karakorums, the Yarkant/Tarim - China's longest inland

river; from the Pamirs, the Kaxgar; from the Tian Shan, the Sino-Soviet Yili, and the Manas; and so it goes, right on around the northernmost boundaries with many smaller rivers interspersed amongst the larger.

With more than a few of these hydroelectric sources there are problems associated with harnessing due to climatic changes. In winter some of the rivers which have as their source the snow melts of higher elevations are dry due to the extremely hot temperatures of the deserts which seemingly absorb all moisture. With still others, rushing water flows down from the higher elevations and disappears beneath the piedmont gravel of lower plateau areas. This is not to say that these problems are irresolvable, but rather that Xinjiang has many hydro sources, some of which have problems that need to be worked out such as reservoir building to ensure a constant flow of water.

In a study published in 1963, it was estimated that the northwest held over 9 percent of China's hydro energy potential.[126] Using the 370 million kw figure, that equates to over 34 million kw of energy. Put another way, the northwest could theoretically generate twice the electricity of the Gezhouba and Three Gorges projects combined.

D. SUMMARY

In summary, the Chinese are at an energy crossroad enroute to their goal of modernization. With oilfield production

growth leveling off in the east and offshore deepwater drilling becoming cost prohibitive a decision is going to have to be made as to how China will secure its future needs. Will it increase investment in offshore development or switch to the northwest?

The most probable course will be an increase of investment in both areas. China will soon reach the point where there is no choice - Beijing will have to exploit both regions to relieve its growing energy needs. By bringing Xinjiang's resources "on line" in conjunction with energy projects in China Proper the Chinese will greatly enhance their industrial growth capacity. As mentioned previously, Xinjiang in itself offers several alternatives for energy development. Hydro power can be expanded to supply regional industrial growth thereby freeing coal and oil for use in the east; pit-head power stations can be built which generate electrical power that can be transferred to industrial centers; or oilfields can be further exploited for export eastward and/or abroad. The Chinese naturally would not be limited to one or the other option as they could be developed in any of several effective combinations.

Regardless of what avenue China takes, Xinjiang's wealth of resources can no longer be ignored. At one time it was said they were being reserved for use in the future. Because of events outlined in this section that future seems to have arrived. A major thrust of Beijing's recent energy strategy

as stated by Vice Premier Yu Qiuli is in effect that China will have to tap all available resources to meet its energy demands. Or as quoted in the introduction: "It is to the Northwest...where the Chinese will have to turn for their future needs..."

V. THE DEFENSE OF XINJIANG

Now that an examination has been made of Xinjiang's contribution to China's modernization effort, attention must be focused on Xinjiang's main detractor - that of defense. In turn, Xinjiang's defense capabilities must be viewed in context with China's overall strategic posture in order to assess Beijing's ability to protect the region from both outside interference and internal disruption. Without the capability to maintain regional stability and positive control, the development of Xinjiang's resources could prove to be a risky endeavor - one in which much needed foreign investors have already voiced a concern over.

In general, China's military modernization has proceeded along the same lines as the Four Modernizations - a boom period with emphasis on foreign imports (arms transfers in the case of defense) followed by a retrenchment that has been marked by a backing away from foreign technology contracts. Because of this, various defense vulnerabilities have emerged or have been perpetuated which impact upon regional defense in Xinjiang. In this section developments in defense modernization will be looked at from 1976 through 1980; current policies and inherent vulnerabilities pointed out; and a possible alternative defense strategy for Xinjiang put forth.

A. THE FOUR MODERNIZATIONS AND DEFENSE: AN OVERVIEW

When the new leadership took power in 1976, Chinese military planners moved quickly in the pragmatic climate to implement a broadly based program to modernize the military machine-building industries. During this period and up to 1978, the Chinese also began the expansion of more than 50 major military industrial facilities and made sweeping changes in the military, scientific and technological structures themselves.

Concurrently, Beijing launched a massive program to study the acquisition of foreign military technology and equipment. From 1976 to mid-1979 more than 4,500 military, technical, and industrial representatives were dispatched from or travelled to China to discuss possible Chinese acquisition of Western military equipment and manufacturing know-how. These delegations discussed and began negotiations on hundreds of items ranging from basic technology such as special metal processing equipment, to major weapon systems including fighter aircraft and missiles.

As these missions acquainted themselves with the modern world, two things quickly became apparent. First, just how far behind China was in weapons technology and, second, modern technology was not to be had cheaply. Countries such as France, Great Britain, West Germany and Sweden which had large sums invested in weapon's research and development were not about to "give away" technology to a potential

market rival. Simultaneously, as Western arms exporters came to realize the enormity of costs involved in modernizing a 3.4 million man army with off-the-shelf weapons and China's lack of and unwillingness to borrow the requisite hard currency, their illusions of another Iranian or Saudi arms market began to dim.

Chinese hopes of coproduction and licensed manufacturing agreements also faded as it became apparent that China did not possess the technological industrial base or skilled labor force to support such operations. Although capable of producing most materials and basic types of machinery required to support current production efforts, China's machine-building industry was (and still is) seriously deficient in its capacity to manufacture superalloys, electrical steels, electronic components, chemical equipment, machine tools and specialized industrial machinery needed for high technology production.

To compound matters, and in addition to the industrial imbalances discussed earlier, there was found to exist a serious lack of coordination between civilian and military purchases abroad. As a result, there was duplication in the importation of both technology and hardware - something which China, short of hard currency, could ill afford.

In conjunction with the "readjustment" period and to ensure the success of its goals, Deng Xiaoping brought to the forefront two previously purged economic leaders. Yao

Yilin, who formerly served as vice minister of trade (1949-52), vice minister of commerce (1952-58), and minister of commerce (1960-67), was reappointed minister of commerce in August 1978. In July 1979, he was named a vice premier and placed on the powerful State Financial and Economic Commission, the overseer of China's modernization effort.[127] Chen Yun, who was responsible for much of the success of China's First Five-Year Plan (1953-57), and formerly elected to the standing committee of the Politburo, was named minister in charge of the State Financial and Economic Commission, "a position that evidently put him in sole charge of China's modernization and marked him as the second most powerful man in the state government, behind Deng Xiaoping."[128]

Both men had previously been purged for their opposition to radical campaigns such as the Great Leap Forward and their pro "expert" stance in the "red vs. expert" controversy over the modernization of defense. Thus, their appointment to high positions was as much a part of Deng's political maneuvering as it was an effort to redirect China's economy.

With Chen at the helm, the "four modernizations" began to take a more circumspective tack which, in turn, impacted on defense modernization and arms transfer negotiations. The most conspicuous result was that defense slipped from third to last in the priority of the four modernizations.[129] As well, the level of military equipment delegations sent abroad began a rapidly decline in 1979.

Behind these obvious changes a subtle, but major economic transformation took place. Chen and Yao moved to establish coordinated civilian control over China's economy which included the rehabilitation and appointment of qualified managers and planners who had, in the past, been branded "capitalist roaders." Communists were now sought for their expertise rather than their political learnings.

In the Ministries of Machine Industries (MMI) which control most military industrial output, civilians were named to ministered positions normally held by PLA generals (see Table 5.1).

TABLE 5.1

THE MINISTRIES OF MACHINE INDUSTRIES

Ministry	Responsibility	Year Assumed Present Responsibility	Current Ministers	Former Ministers
Second	Atomic Energy	Sept. 1960	Liu Wei (Brig-Gen)	Song Renqiong (Lt-Gen) Liu Jie Liu Xiyao
Third	Aircraft and Aerodynamic Missiles	1963–65*	Lu Dong	Zhang Liangui Sun Zhiyuan Li Qitai (AF Maj-Gen)
Fourth	Electronics	May 1963	Qian Min	Wang Zheng (Lt-Gen)
Fifth	Ordnance (conventional weapons, etc.)	Sept. 1963	Zhang Zhen	Qiu Zhuangcheng (Lt-Gen) Li Chengfang (Gen)
Sixth	Shipbuilding	Sept. 1963	Chai Shufan	Fang Qiang (V-Adm) Bian Jiang
Seventh	Ballistic Missiles	Jan. 1965	Zheng Tianxiang	Wang Bingzhang (AF Lt-Gen) Wang Yang (Gen) Song Renqiong (Lt-Gen)
Eighth	(see text)	Sept. 1979	Zhiao Ruoyu	(None)

* Third MMI was responsible for all military industry (less nuclear) in 1960-1963. Between September 1963 and September 1965 various product lines were assigned to the new Fourth through Seventh MMIs, leaving the Third MMI responsible only for aircraft

Source: Harlan Jencks, "Chinese Defense Modernization," Asian Survey, October 1980, p. 390.

This move reaffirmed Deng's desire to assert civilian control over the military and China's plan to eliminate the

competitiveness which had produced redundancy and waste in both foreign purchases and domestic production.

The overall emphasis of industrial production was shifted from heavy to light industry in an effort to, one, develop the requisite infrastructure that China lacked for its modernization (i.e. roadways, rail system, port facilities and light machinery) and, second, to satisfy the growing consumer demands of its burgeoning population (i.e. housing, radios, refrigerators, etc.). Towards this end defense industries were called upon to assist through the production of civilian goods at PLA factories.

In the wake of this economic readjustment arms negotiations slowed to a snail's pace with little if any hardware being bought or sold. The Chinese seemingly adopted the Japanese Meiji Restoration technique of buying as little and borrowing as much foreign technology as possible. The official party line as editorialized in RENMIN RIBAO demonstrates this point:

> We must persist in the principle of importing fewer complete sets of equipment and importing more technology. Duplication in the importing of complete sets of equipment is very harmful for the development of domestic machine manufacturing as well as for ridding ourselves from dependence on foreign technology. Equipment that can be manufactured in cooperation with foreign buisinessmen, should be strictly controlled. [130]

This statement is not an isolated one and it does not pertain to civilian modernization alone. It is part and parcel of a broad spectrum of change through which China is

attempting to modernize. Unfortunately, national defense, a major target of that change has, in turn, become its victim. What began as a massive drive to modernize China's war machine and acquire superpower status through foreign arms and technology transfers has now been suspended in limbo with the PLA remaining equipped with outdated and outmoded weapons.

B. CURRENT STRATEGIES AND VULNERABILITIES

While this period of readjustment may prove beneficial to the formation of a solid base for modernization in the long run, it has done little to enhance China's defensive capabilities in the interim. As Beijing needs freedom from both internal dissension and foreign intervention in order to modernize it has become caught in yet another "Catch-22." How can China subordinate military development while at the same time maintaining a viable deterrence?

Deng's response to the situation has been to borrow time for modernization by creating a defense strategy that is sustained by three broad assumptions. These assumptions are: 1) the Soviet Union is and will remain militarily over extended; 2) diplomatic ties with the West will provide a counter-balance to Soviet hegemony and; 3) the "luring deep" concept of People's War is still a viable defense tactic.

While Deng's overall strategy may be valid at present, the assumptions are, however, subject to change in the case of the first and questionable in the latter two.

To begin with, the Soviet Union which has 10 divisions in Afghanistan, 44-46 divisions along the northern boundary of China and 500,000 troops situated around Poland, is fairly well extended. This, however, is not a static situation. Moscow has achieved a great deal of flexibility in the deployment of its highly mobile forces and is quite capable of redeploying them in response to strategic opportunities. There is no rule that states that Soviet forces have to remain in Afghanistan or anywhere else if larger gains are to be had elsewhere at cheaper costs. Although this is a simplistic statement of Soviet force deployment, the point is obvious - Beijing cannot count on Moscow's strategic posture today for the security it will need tomorrow.

The second assumption - ties with the West will counterbalance Soviet hegemonism - is questionable at best. Over the past few years the Chinese have placed a great deal of emphasis on the insertion of "anti-hegemony" clauses in their agreements and communiques with other nations. The United States signed one in 1972 as did the Japanese in 1978. Although part of China's diplomatic encirclement of the Soviet Union one has to question whether or not these clauses are more than rhetorical grist for cocktail toasts and grease for the skids of trade. Granted, it is in our best interest to be diplomatically allied against Soviet aggression, but how bound would the United States be if Moscow decided to teach China a lesson through a limited intervention?

Understandably, there would be worldwide outrage and response to a Soviet preemptive nuclear strike or massive conventional invasion of China's industrial heartland. But, what if they instead, seized a piece of the Gobi Desert or the Junggar Basin? Would other nations be so willing to risk a military confrontation? While at present an intervention of this sort would not be so physically damaging as it would prove psychologically humilating, it could have the same result of disrupting China's modernization effort and creating internal dissention and chaos from which China might not recover.

The last assumption - that China can be defended by a "luring deep" concept of defense - is the weakest of all. China's luring deep strategy has its roots in the strategy China used against the Japanese. As expoused by Mao Zedong, luring deep is a tactic whereby a militarily superior enemy is lured deep into one's own territory, cut off from supplies and communications, then annihilated by guerrilla forces.[131] It is predicated on an active defense and utilization of China's expansive geography to overextend the enemy. The basic condition of military inferiority which dictated its adoption during the 1920s and 1930s still prevails in 1980. The strategy, then and today, has been adopted out of necessity not volition. While this strategy has the capability to deal with a major Soviet ground invasion in northeast China it would not prove effective in dealing with a medium-scale

and limited-objective attack in more remote and sparsely populated regions.[132] Before continuing on to defense alternatives it might be helpful to summarize what has been stated thus far.

First, Deng's retrenchment in arms purchases from abroad has been in conjunction with moves on the part of Deng Xiaoping to bring China's modernization effort in line with economic reality. That reality is, of course, that China lacks the foreign currency with which to purchase mass quantities of technology; it does not have the infrastructure to support industrialization goals; and, there were too few qualified managers and planners left after the Cultural Revolution to give direction to, and manage efficiently, China's modernization.

Secondly, in a move that is both political and economic in purpose, Deng has in response, subordinated military needs to those of the civilians sector in an effort to realign industrial production and achieve civilian control over the military. This, in turn, has only perpetuated China's defensive weaknesses in the face of ever-increasing Soviet military superiority.

Lastly, to offset China's lack of military modernization Deng has had to seek solace in a defensive strategy that is predicated on three assumptions: 1) Moscow will remain militarily overcommitted; 2) ties with the West will counter Soviet hegemony; and 3) China can thwart Russian aggression

with its archaic luring deep strategy. As discussed above, these assumptions are tenuous at best and leave China's security highly questionable.

C. XINJIANG: CHINA'S ACHILLES HEEL

As stated previously, the PRC is most vulnerable to a limited-objective strike by Soviet forces in its more remote regions which are large in area and sparsely populated. Autonomous regions such as Tibet, Inner Mongolia, and Xinjiang Uygur all fit this description to one degree or another. Because the Xinjiang Uygur Autonomous Region has more to lose in the way of strategic resources and due to its geographical location, it is the most vulnerable, of the three.

1. Factors Favoring Soviet Forces

When one attempts to establish a defense strategy there has to be a specific threat in mind with which to base weapons procurement upon. In the case of Xinjiang, Soviet tactics, geography, indigenous population, and historical precedence are all determinants of a likely threat scenario that would have to be defended against.

Soviet tactics: One finds that with the exception of the utilization of a massive airlift capability Soviet tactics have changed little over the years. Conventionally, on the ground, Soviet doctrine still stresses the elements of surprise and overwhelming numbers favoring them in both

equipment and firepower.[133] Over the years the USSR has developed an extensive capability through the deployment of its heavily armored and highly mobile motorized infantry units. Based on their most recent experience in geographically - similar Afghanistan, China could expect the Soviets to utilize these units in the XUAR.

Geography: Xinjiang shares a long and contiguous geographic border with the Soviet Union. Over the years, the Soviets have demonstrated a keen interest in areas adjacent to that border through involvement ranging from economic investment to military intervention. During the 1960's and 1970's numerous border skirmishes were fought at various locations along its length.

Xinjiang is composed of two large basin areas: the Junggar and the Tarim which are each enclosed by imposing mountain ranges. While providing natural protective barriers the Junggar's western ranges also have several easily accessible passes such as the Yili River Valley, Alataw Shankou (Dzungarian Gate), and Turugart Shankou which have traditionally provided for population and military movements from Turkestan into China and vice versa.

Looking towards China Proper in the east, access is via several hundred miles of desolate Gobi Desert. Because of the arduous terrain which separates Xinjiang all direct traffic must transit through the narrow Hoxi Corridor (Gansu Corridor) which historically has been referred to as the

"choke point" for hostile invasion from the west. Today, transport to Xinjiang from China's heartland is still tenuous at best and involves approximately three days travel time on a single track vintage railway or lone highway. Transport reliability on either is wholly dependent on weather conditions in the region.[134]

Indigenous Population: In total, there are over ten different ethnic groups living in Xinjiang. While many are indigenous, some are either refugees from Soviet Turkestan or nomadic herdsmen caught on one side of the controlled Sino-Soviet border and unable to return. Although each of these people exhibits their own ethos most have had at least two things in common: Islam and a fierce sense of independence. Under Chinese rule, these two elements have been combined to produce a vitriolic anti-Han sentiment which, over the years, has manifested itself in several violent Moslem revolts which the USSR has been quick to exploit.

In order to diffuse Xinjiang's volatile situation, Beijing has attempted various programs including mass transfer of Han Chinese to minority populated areas, openly criticizing "big Han chauvinism" (racial prejudice), stressing cultural identities, and encouraging minority participation in local government. While well-intentioned, these programs have met with limited success at best. Minority participation in government remains at a token level, cultural animosity is still prevelant, and most Han sent to

Xinjiang view it as the "outback" and have been less than enthusiastic over their forced transfers. Additionally, many of the people transferred to Xinjiang over the years have included in their ranks hardened criminals, captured Nationalist troops, and dissidents.

By the end of the Cultural Revolution, Xinjiang's non-Han population had swelled from being third in size to first and comprising 50% of the region's totol population. That figure has since begun a continuous decline as many of the Han are now returning to their original home regions in the east. Today, Han Chinese make up a declining 40% of Xinjiang's 12 million people.[135]

With the above in mind one must closely examine military defense forces in the region which are of necessity dependent upon local militia for reinforcement and support. Without going into detail on PLA troop deployment, it should be noted that in comparison to other regions of China, there are fewer divisions deployed in Xinjiang Military Region (which is the largest in terms of land area) than in any other region (see Figure 5.1). It must be also be noted that troops and equipment sent to Xinjiang have traditionally not been of the highest caliber. The best equipment and manpower has been retained in Shenyang Military Region and, more recently, dispersed to the Guangzhou Military Region in the southeast. Consequently, the role of the militia becomes more significant. It also becomes highly relevant

MILITARY REGIONS

Figure 5.1

Source: CIA Map no. 504119 4-79 (541790)

that a sizeable number amongst the Han-led militia's ranks are drawn from indigenous ethnic minorities. In his soon to be published book, From Muskets to Missiles, Harlan Jencks has called into question both the fighting capability and allegiance to Han leadership of Xinjiang's militia in view of the fact it is comprised mainly of minorities and social rejects.[136] Although the militia cannot be altogether discounted as a fighting force its effectiveness in time of war has to be uncertain.

Historical Precedence: The final element which must be considered is the historical precedence for Russian involvement in Xinjiang. The Russians have been involved in the XUAR for over 100 years and this involvement has ranged in scope from military intervention, support for local independence moves, stationing of permanent troops, to the exploration for and extraction of petroleum and other resources. For many years the warlords of Xinjiang and Moscow negotiated trade and loan agreements and exchanged consulates without the cognizance of Chinese government in Beijing. In fact, it wasn't until 1962 that Soviets were forced to leave the region at the behest of Mao Zedong.[137] However, by that time they had gained a good amount of knowledge about the XUAR's geographical features, minority problems and strategic resources.

2. A Scenario for Intervention

With the above information in mind, it is now possible to put forth a scenario which describes how a Soviet attack might proceed. It must be understood that there are many variations of this scenario, but they all have certain commonalties: surprise, speed, mobile armor and limited access routes into the XUAR.

Starting in the west through strategic passes would come the main thrust of 10 to 15 Soviet motorized infantry divisions. A number of thrusts and feints could be made through the Yili River valley, Dzungarian Gates, Turugart Shankou or the Buran region (see Figure 5.2). All afford terrain accessibility which is similar to or easier than that encountered by the Soviets in Afghanistan. Each pass is within 200 Km of Soviet cities which are serviced by rail, road and air thus making them possible staging areas.[138]

Once through the mountain passes tracked vehicles would not be confined to roadways as the Junggar Basin is, for the most part, a vast expanse of flat arid desert - well-suited to tank warfare. Additionally, the hard packed soil of much of Xinjiang could provide unimproved landing areas for Soviet aircraft flying in fuel, ammunition, and support personnel and equipment.

In concert with the advance in the west a simultaneous thrust would probably be made from the Mongolian Peoples Republic. These forces would push south to the Gansu

POSSIBLE SOVIET INVASION ROUTES

Figure 5.2

Source: National Geographic, July 1980 (invasion arrows are the author's)

(Hoxi) Corridor - the historical "choke point" through which all major transportation routes funnel between China Proper and Xinjiang. They could stage in Altay, thrust south, refueling in Bayan Ondor, and enter China along the Nei Mongolia Autonomous Region and Gansu border. From there it would be a 300 Km drive to the Gansu Corridor where, once in control, the Soviet forces could effectively isolate Xinjiang from support and resupply from the eastern military districts. Communications which are likewise tenuous could be severed leaving the Xinjiang MR isolated from command and control in Beijing.

Both the east and west invasion routes would easily be provided air support from numerous Soviet airfields which surround Xinjiang. Soviet MIG-21s and MIG-23s operating out of Alma Ata and Altay could provide air support for all invasion routes and overlapping coverage for the central Dzungarian area which would include Urumqi and Turpan.

Once the western forces had succeeded in breaking through into the Junggar Basin and the eastern forces had severed transport and communications links with China Proper, the two forces in part or whole could merge on Urumqi, bypassing lesser important cities. Depending on their complete objectives Xinjiang would more or less be secured as Soviet troops would have control of strategic accesses to and from the region.

3. Current Defense

Exact figures on troop deployments in China have never been a matter for public consumption and to complicate matters, Xinjiang is off the beaten path with much of its area being restricted in access to foreigners. Therefore, traveler's tales are not as frequent and intelligence not as accurate as one would like. However, information regarding minority problems, Han dissatisfaction with life in Xinjiang, and general statements of PLA troop deployment can be gleaned from Chinese open sources. From these and other Western sources one can piece together a generalized statement of the Chinese defense posture in Xinjiang.

The International Institute for Strategic Studies list current military forces in the Urumqi Military Region (Xinjiang) as six infantry divisions and eight local force divisions.[139] While the former can be assumed to be at full strength in weapons and personnel (see Figure 5.3 for composition) the latter's strength is questionable. In the words of Harvey Nelson, author of The Chinese Military System,

> "...under normal peacetime conditions they are not maintained at a high level of readiness but are widely dispersed. For example, and independent regiment is normally attached to a military subdistrict command, its subordinate battalions and companies scattered over several countries engaged in public security, militia work, or assisting in civil construction. This provides scant opportunity for large unit training."[140]

At the lowest echelon of defense are the militia which are mobilized in the event of war. In Xinjiang, the

ORGANIZATION OF CHINESE (PRC) INFANTRY DIVISION

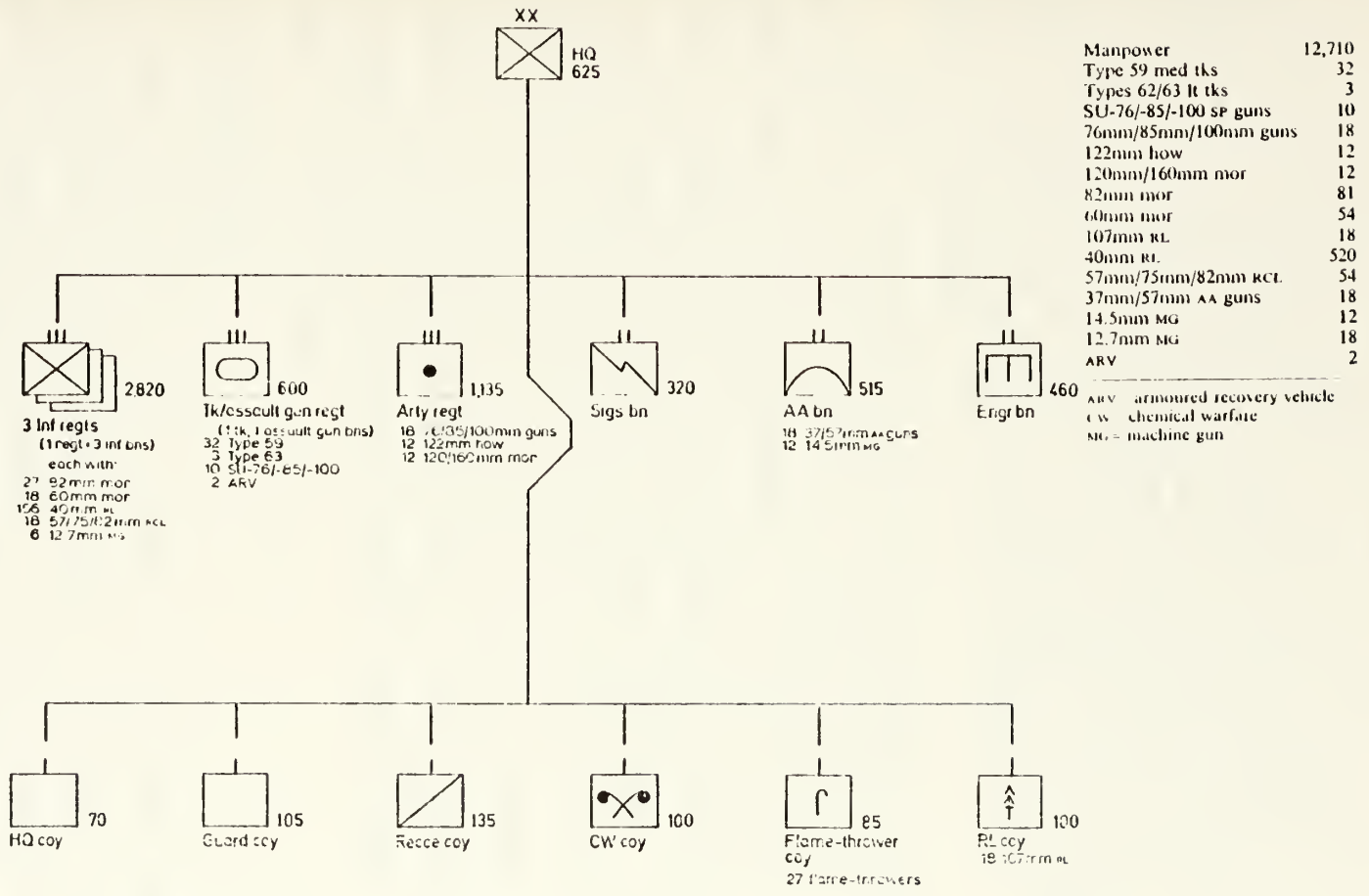

Figure 5.3

Source: The Military Balance 1980-1981 (London, England: IISS, 1980), p. 101.

militia is manned to a large extent by minorities whose allegiance, as discussed previously, is questionable. The problem as stated by Professor Lowell Tillet is as follows:

> "Those national minorities that live athwart the Sino-Soviet boundry present particularly difficult problems for the future. Although the prospect of independent states for nearly all of the Mongolians, Kazakh, or Uighurs seems indeed visionary in view of the constant counter-pressures exerted upon them, there is another scenario not nearly so improbable. If tensions between the USSR and PRC continue to escalate, minority leaders may find new leverages. And if the dispute should come to war... large military forces would be tied down in controlling populations of doubtful allegiance."[141]

In sum, one sixth of China is currently defended by a core group of 76,000 PLA troops equipped with 1950 vintage equipment and who are supported by a population that is militarily organized, but whose loyalty is questionable. In turn, these defense forces like those in the east are operating under the luring deep doctrine and are prepared to make their stand at the heavily fortified city of Urumqi. With the existing military vulnerabilities it is debatable whether or not Soviet forces could be "quickly annihilated" once they had been lured deep.

D. AN ALTERNATIVE

An examination will now be made of the possibilty of China developing an alternative defense strategy through a program of limited arms transfers. What is proposed are selective arms purchases which would be tailored toward a specific threat in a specific region. The ultimate goal

would be to maximize risks to the Soviets with minimum costs to the Chinese. This, of course, is in contrast to the current strategy which calls for the relinquishment of vast amounts of territory.

The weapons procured would be allocated to specific units whose operating doctrine would be based on "relational-maneuver." Described by Steven L. Canby and Edward N. Luttwak, the aim of relational-maneuver is to

> ... optimize terrain advantages, cultural factors and ad hoc force configurations to exploit identified enemy weaknesses; such methods are "relational" in the sense that they are responsive to the local context and the specific nature of the enemy... Since relational-maneuver methods achieve their effect by deception and fluid action to achieve first surprise, then shock and finally disruption, they generate a demand for agile forces of simple structure (high teeth-to-tail ratios)...[T]he motivating dynamics of relational-maneuver methods... [is to] avoid the attritive clash of strength precisely because it is only by exploiting specialized or localized superiorities that an enemy materially superior overall may be overcome.[142]

Weapons purchased with relational-maneuver in mind would not only give existing forces enhanced mobility, but, in the Chinese case, an enormous increase in firepower. As these procurements would be specific, limited in scope, and not entail the reequipping of whole armies, their cost in the overall Chinese defense budget would be manageable.

In selecting weapons to compliment this strategy several considerations have to be made:

1) what weapons would be required to thwart a Soviet combined arms thrust; 2) which suppliers have and are

willing to export these weapons; and 3) whether or not China can absorb both the technology and costs involved.

1. ATGM Units: An Effective Response

It must be assumed that China would prefer to stop the Soviets prior to their breaking through the strategic mountain passes into Xinjiang. To accomplish this the PLA will require an anti-tank weapon that is mobile in a variety of terrain, easily concealed so as to maintain the element of surprise, and capable of engaging tanks at stand-off distances. Currently, there are several systems on the world market which meet these requirements - the British Swingfire, the French/German HOT, and the American TOW (see Appendix C for weapons descriptions and suppliers).

In a recent article, "Can Western Europe be Defended by Conventional Means?,"[143] LT Colonel Norbert Hannig suggests an alternate means of defending against a Soviet tank attack in Europe which, in this author's opinion, would be applicable to Xinjiang as well. Because his strategy is centered around small, mobile anti-tank guided missile (ATGM) units it would fit easily with relational-maneuver doctrine.

Colonel Hannig's proposal entails the equipping of combat militia units with anti-tank missiles (both long and short range) as their main weapon. Additionally, these units would be armed with man-portable, low-level air-defense missiles to defend against helos and ground support aircraft

The stabilized platforms on which the ATGMs are mounted can take many forms from inexpensive wheeled vehicles (trucks and jeeps) to the more costly tracked vehicle. Choice would depend on availability of roads and the terrain on which the enemy will be engaged. For China a mix of both wheeled and tracked vehicles would be preferred because of the limited number of roads and the variable terrain features. China, at present, manufactures jeep-type vehicles and armed personnel carriers (the M-1967 or K-63) which could possibly be utilized in this role.

Organizationally, Hannig suggests these units would require a personnel strength of five officers plus 130 enlisted men to operate 36 stabilized firing platforms, each with four launch tubes, and a total 864 ATGMs and 90 air-defense missiles. These units would operate on a more or less independent basis rather than formally belonging to an artillery or infantry division. The Chinese who are experienced at operating in small independent units would have little trouble adopting this organization.

Expense-wise, Hannig estimates the cost for equipping individual units - considering only the cost of the ATGM platforms and missiles - to be around $37 million. Contrasted with the cost of a Soviet tank division (the attacking force that a defensive unit could destroy) which Hannig estimates to be about $480 million, these units are quite cost effective.[144]

Of course, costs for China would vary according to several factors. On the lower side, China would not necessarily require 36 platforms per unit as many of the invasion routes are too narrow to accommodate that many. As well, the Chinese produce several vehicles which could be utilized as stabilized platforms thereby saving them the higher costs of importing.

The factor which raises the cost for China is the fact that the prices quoted above are for NATO countries purchasing NATO produced weapons. Beijing could not hope to purchase them at those prices. As mentioned earlier, arms exporters are not about to give away technology to a potential market rival.

As a rough estimate it would cost China around $500 million to purchase 20 complete ATGM units (This figure was arrived at by doubling the price quotes in open sources of sales to Western nations). Not a figure to be sneezed at, it is, considering China's $56 billion defense budget for 1980, a manageable amount. This is especially true when one figures that these units could deter a medium-scale attack by the Soviets (15-20 divisions).

2. Deployment Tactics

These ATGM units would be based at strategically located sites at the base of mountain passes. There they would train and prepare for rapid deployment to the passes themselves. In fact, several units from each base camp could

be rotated to probable engagement areas so as to maintain a higher state of readiness.

Should a Soviet advance be discovered these units would position themselves with the short-range weapons camouflaged and stationed ahead of the long-range weapons. In this way invading forces could be slowed or halted beyond their own effective firing ranges and then attacked by shorter ranged weapons. Several of these units could be situated at intervals along the mountain routes to provide a defense-in-depth.

VI. CONCLUSION

China is currently at a critical point in its economic, social and military development. How Beijing proceeds over the next few years will determine China's future as a nation state and international power for decades to come. Unlike years past when Mao attempted to force social/economic change through massive and terribly disruptive campaigns, Beijing can no longer afford to absorb the debilitating side effects of such mass movements. Contrarily, what the Deng-led government needs more than anything is a period of internal stability and freedom from external interference. To achieve this Deng Xiaoping is faced with the difficult task of satisfying the needs of the military, Maoist holdover officials, and the populace at large.

The military, or barrel out of which power grows, has seen both its authority and budget trimmed over the past few years. The Maoist holdovers have seen many of their comrades purged or locked up and whole government programs instituted which only five years ago would have been branded as capitalistic and anti-socialist. The general populace which, in the end, may prove the most difficult to placate have, with the opening of China to the West, been exposed to a massive influx of material goods and a whole new world of living standards - most of which lay beyond their means.

The most logical course that Deng can pursue is to get China's economy on an even keel and on the path towards steady growth. Only if the economy grows can Beijing satisfy the masses' consumer expectations, meet the demands of defense for a modernized military and, in turn, disarm Maoist opposition.

No mean task, it none-the-less can be accomplished. However, it will require a large input of capital investment into both the infrastructural sectors of industry and the development of additional resource reserves.

At present, China is finding it increasingly difficult to supply both domestic consumption and export demands for increased energy resources. The reason for this is twofold. First, existing transport and processing facilities - pipelines, railroads, harbor facilities and petro-chemical plants - are proving inadequate in the face of increased demands. And secondly, known resource reserves such as the eastern oil fields are proving to be not inexhaustible. Production growth rates which in the past were marked by increased capacities have now begun to level off and even decline. New offshore fields are not only risky ventures, but expensive to the point of becoming cost prohibitive.

So, even if a more efficient infrastructure were built it is doubtful that existing energy reserves could keep up with increased demands from both domestic and foreign consumers. Sooner or later Beijing is going to have to turn

toward Xinjiang for its needs. Xinjiang offers extensive energy resources in known locations which are more easily extracted than those currently being sought offshore. Additionally, the XUAR's population is small, less industrialized and, therefore, not a great resources consumer. Basically, whatever is extracted is available for export to China Proper or abroad.

Before any serious effort at developing the region can be attempted Beijing will have to take a long hard look at regional defense. Today, the strongest factor in Xinjiang's defense is the fact that it offers the Soviets little in the way of gains should they decide to intervene militarily in the region. The Soviets have always operated on the premise that the gains should justify the risks. Moscow is not about to risk becoming involved in a major war with China just to conquer a desert basin. There has to be more such as the capture and control of major industrial centers or resource reserves which, by their loss, could contribute to economic chaos and/or a political upheaval in China.

So what options for Xinjiang's defense are open to Deng? In lieu of a modernized army China has been forced to rely on a luring deep strategy in the northeast which requires a large concentration of manpower and therefore prevents the transfer of large forces to the northwest. Besides, it is doubtful that China would attempt to permanently station a sizeable military force in such a remote and isolated region as Xinjiang. Not only would the logistics of such a deployment be

difficult, but morale in this, a basically alien region, could prove to be a problem of major proportions. In the past large influxes of Han have been met with opposition from the minorities and discontent on the part of the relocated Chinese themselves. Transferring large numbers of military forces would only create more problems than it would resolve.

A more viable solution lies in the equipping of existing local forces with modern anti-tank weapons which would increase their fire power tremendously and, in the process, escalate the cost or risk factor to the Soviets. The cost to the Chinese would be both manageable within existing budget constraints and minimal compared to other options. Additionally, a limited weapons acquisition program of this sort would have a technology spin-off effect that would enable the Chinese to eventually produce their own copy of these imported systems.

Defensively speaking, forces equipped with ATGMs would be highly mobile, capable of attaining surprise and shock effect and, most importantly, would have the ability to inflict heavy enemy losses on a cost effective basis. Xinjiang's geography, which forms a natural barrier, could be exploited so that ATGM-equipped forces could engage a potential invader in the limited access routes through which they would have to pass.

To complete the defense picture in Xinjiang, Beijing will also have to secure the allegiance and trust of the indigenous population. To accomplish this the minorities will have to be given the recognition, responsibility and regional authority that is rightfully theirs. This, of course, cannot be accomplished forthwith in a region so strategically important as Xinjiang. It will take time and patience to achieve the mutual trust and respect required on the part of both Han and minority. The policies instituted by Deng, thus far, seem to be directed toward that end. What is required still yet are continued policies that are consistent in application and rational in content. What is not needed is another destabilizing Great Leap or Cultural Revolution.

In summary, Xinjiang, with its cornucopia of resources can play a major role in the success of China's four modernizations. This will require a rational approach on the part of Beijing towards the indigenous nationalities and a redress of the region's defense vulnerabilities. Otherwise, Xinjiang will remain as it is today -- remote, underdeveloped and, militarily, China's Achilles Heel.

APPENDIX A

NORTHERN XINJIANG

Source: National Geographic, July 1980.

APPENDIX B

SOUTHERN XINJIANG

Source: National Geographic, July 1980.

APPENDIX C

WEAPONS AND SUPPLIERS

A. Anti-Tank Missiles

Swingfire (U.K.)

Swingfire is a long-range command-controlled anti-tank weapon system capable of engaging and destroying the heaviest armor. The missile is wire-commanded with signals being generated by an operator's joystick control. An important feature of the system is its ability to operate with the launcher concealed behind cover in such a way that there is no clear optical sight-line from launcher to target. The operator can be stationed a considerable distance (up to 100m) from the launcher. The Swingfire can be fitted on numerous types of wheeled and tracked vehicles. The missiles themselves are prepacked in hermetically sealed launcher boxes making it a panclimatic system. It employs a hollow charge warhead and has a min/max range of 150m/400m.[145]

As far as exporting weapons to the PRC, Britain has, with its sale of Rolls-Royce Spey engines and negotiations for Harrier aircraft, proven itself amenable if not eager to pursue the matter despite COCOM decisions to the contrary.[146] Their defense industries depend on foreign arms sales for 25% of its business which, in turn, helps to pay for R&D and extends production runs. With the high cost of technology and a relatively small armed forces, Great Britain will continue to have good reason to pursue arms transfers to China.

HOT (French/German

HOT is a long-range command-controlled anti-tank weapon system capable of engaging and destroying the heaviest armor. The missile is wire-guided. The system can be fitted to a variety of platforms including helicopters.

> It employs a hollow charge warhead and has a min/mak range of 75m to more than 4 Km. The HOT system has gained wide acceptance amongst NATO countries and is becoming the main ATGM system in many forces.[147]

The main exporter France, has been haggling with the PRC for HOT missile sales since 1977. To date, a deal has yet to be firmed up.

TOW (U.S.)

The weapon system is similar to Swingfire and HOT, but because of current restrictions on weapons system's sales to China, TOW will not be discussed.

B. Air-Defense Missiles

Blowpipe (U.K.)

> Blowpipe is a surface-to-air weapon for unit self-defense in forward areas against close-range low-level air attack To carry out this role effectively the equipment is compact, light, and simple so that it can be carried and operated by one man. The weapon is suitable for use in extremes of climate with no maintenance needed during long periods in the field. The Blowpipe system is entirely self-contained with no external power requirements. It can be used against both attacking and receding fast aircraft and helicopter targets.[148]

To date no known negotiations on Blowpipe have taken place between Great Britain and China.

RBS-70 (Sweden)

> RBS-70 is a portable surface-to-air missile system which is substantially immune to jamming. It is suitable for use aaainst both fighter-bombers and helicopters and has a range of about 5 Km. With the accompaning training equipment an average AA soldier can be fully trained within 15-20 hours, and without a need to fire live rounds.

Sweden and China have discussed or negotiated the sale of aircraft (Viggen), AA guns (BOFI 40 mm), and surface-to-air missiles (RBS-70).[149] As of this date, none have come to fruition. Sweden, which depends on arms exports for much the same reason as Britain, seems to be willing to sell if China wants to buy.

C. Short Range Anti-Tank Missiles

Importation of these weapons will not be discussed as the Chinese are currently producing an indigenous copy of the Soviet "SAGGER" ATGM, a design that entered Soviet service in 1965.[150] It is the author's opinion that the Chinese will produce this weapon in sufficient numbers so as to to eliminate the need to import.

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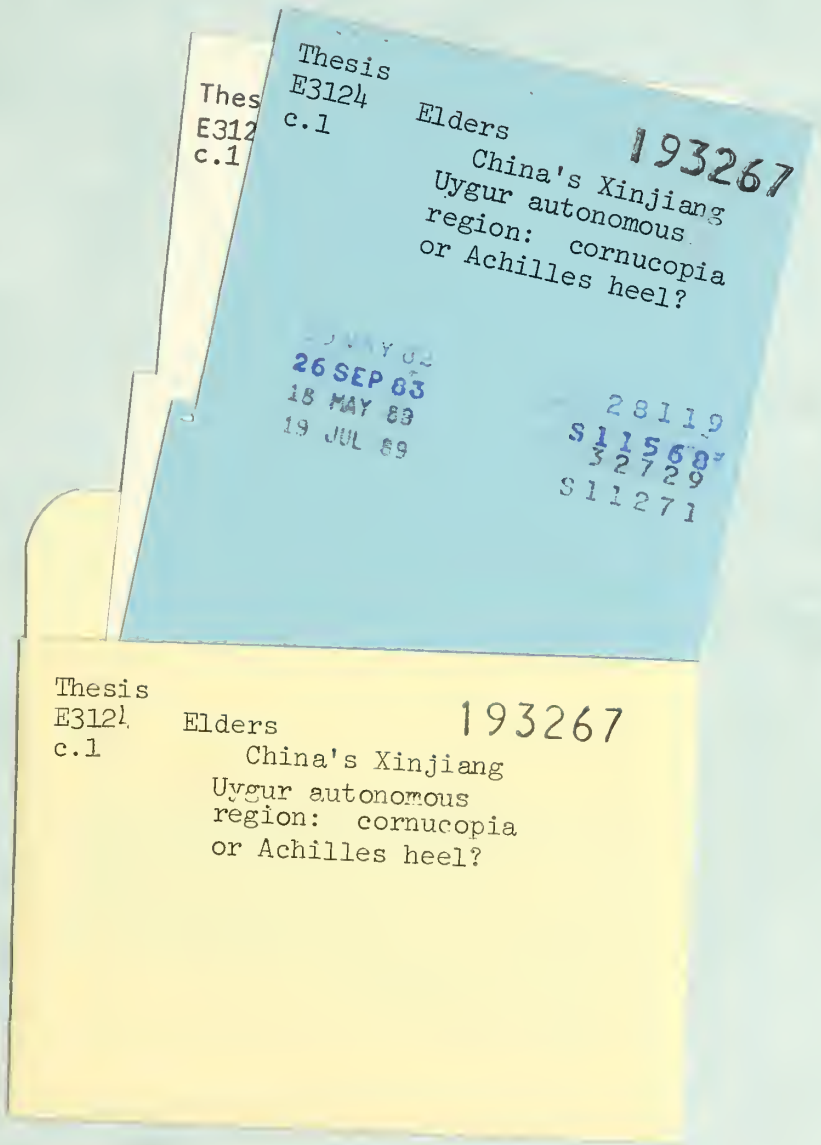
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